DHC-MD7

SERVICE MANUAL

• DHC-MD7 is composed of following models.

As for the service manual, it is issued for each component model, then, please refer to it.

US Model Canadian Model E Model Tourist Model

COMPONENT MODEL NAME FOR DHC-MD7

AMPLIFIER	TA-M7
TUNER	ST-M9
CD PLAYER	CDP-M7
MINIDISC DECK	MDS-M9
SPEAKER SYSTEM	SS-EX55G

SPECIFICATIONS

General

Power requirements

US, Canadian model: 120V AC, 60Hz

Other models:

110 - 120V or 220 - 240V AC, 50/60Hz

Adjustable with the voltage selector

Power consumption

130W

Supplied accessories

AM loop antenna (1)

Remote RM-S7MD (1)

Sony SUM-3 (NS) batteries (2)

FM lead antenna (1)

Flat cord (1)

Audio cords (4) (50cm, for connecting components)

Optical cable (1)

Speaker cords (2)

Design and specifications are subject to change without notice.

PARTS LIST

NOTE:

 Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Part No. Description

Remark

ACCESSORIES & PACKING MATERIALS

1-473-401-11 COMMANDER, STANDARD (RM-S7MD)

1-501-659-11 ANTENNA (FM)

1-501-721-11 ANTENNA, LOOP

1-769-170-21 CORD (WITH CONNECTOR 7P) (TA-ST-CDP-MDS)

1-769-307-11 CORD, SPEAKER (2m)

1-775-373-11 CORD, CONNECTION (AUDIO 50cm)

1-775-924-11 CORD, LIGHT PLUG

3-800-888-11 MANUAL, INSTRUCTION

(ENGLISH, FRENCH, SPANISH, CHINESE)

3-800-888-21 MANUAL, INSTRUCTION

(PORTUGUESE, KOREAN) (Tourist model)

4-955-381-01 COVER, BATTERY (for RM-S7MD)

* 4-978-476-01 CUSHION (UPPER) (TA-ST-CDP-MDS)

* 4-978-477-01 CUSHION (LOWER) (TA-ST-CDP-MDS)

* 4-980-788-01 CUSHION (EX) (SS)

* 4-982-444-01 INDIVIDUAL CARTON (SS)

* 4-984-652-01 INDIVIDUAL CARTON (TA-ST-CDP-MDS)

COMPACT Hi-Fi SYSTEM STEREO SONY



Sony Corporation
Home A&V Products Company

English 96E0438-1D Printed in Japan © 1996.5

MDS-M9

SERVICE MANUAL

US Model Canadian Model E Model Tourist Model



MDS-M9 is the Mini disc deck section in DHC-MD7.

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	MDS-302
MD Mechanism Type	MDM-2B
Base Unit Type	MBU-2
Optical Pick-up Type	KMS-210A/J-N

SPECIFICATIONS

MiniDisc digital audio System

> system MiniDisc

Disc Recording system Magnetic field

modulation overwrite

system

Playback scanning system No-contact optical scanning (using a semiconductor laser)

Semiconductor laser Laser

 $(\lambda = 780 \text{ nm})$

Max 44.6 μW* Laser output

* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

74 minutes max.

Recording time (using MDW-74)

Approx. 400 rpm to Revolutions

900 rpm (CLV)

Error correction Advanced Cross

> Interleave Reed Solomon Code

(ACIRC)

Sampling frequency

44.1 kHz

Adaptive Transform Coding

Acoustic Coding

(ATRAC)

Modulation system

EFM (Eight-to-Fourteen

Modulation)

Number of channels

2 stereo channels

Frequency response

5 Hz to 20 kHz ±0.3 dB

Signal-to-noise ratio

98 dB or more (during playback)

Dimensions

Approx. 280 x 82.5 x 285 mm $(111/8 \times 31/4 \times 111/4 in) (w/h/d)$ incl. projecting parts and controls Mass Approx. 2.3 kg

(5 lb 1 oz)

Design and specifications are subject to

change without notice.



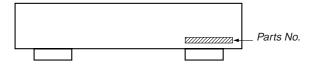


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MODEL IDENTIFICATION — BACK PANEL —



	PARTS No.
US,Canadian model	4-977-679-3π
Other model	4-977-679-2π

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

CLASS 1 LASER PRODUCT LUOKAN 1 LASERLAITE KLASS 1 LASERAPPARAT This appliance is classified as a CLASS 1 LASER product.
The CLASS 1 LASER
PRODUCT MARKING is located on the rear exterior.

CAUTION	;	INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL	;	USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO!	;	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA DLET ALTTIINA LASERSÄTEILYLLE.
VARNING	;	LASERSTRÄLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL	;	USYNLIG LASERSTRÄLING NÄR DEKSEL ÄPNES

This caution label is located inside the unit.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

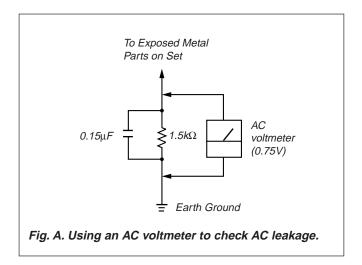
SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

- A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
- 2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
- 3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 SERVICE NOTE

Power Supply During Servicing

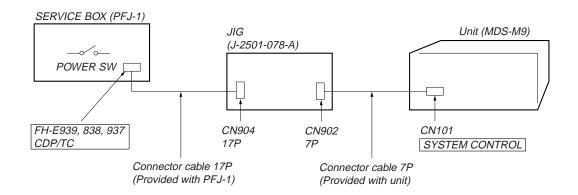
This unit is not able to operate on its own because it does not have its own power supply. During servicing, connect to other units.

Power is supplied when the SYSTEM POWER button of the amplifier (TA-M7) is turned ON.

If the other units are not available, use a service box (PFJ-1) and jig (J-2501-078-A).

In this case, press the button, REC button, and DISPLAY button simultaneously to turn on the power.

[Connection Diagram]



KEY/Fluorescent Indicator Tube/LED Check Mode

Press the button, REC button, and SHUFFLE button simultaneously to turn on the key/Fluorescent indicator tube/LED check mode. During the check mode, press any button or rotate the SELECTOR knob to proceed onto the next step.

- ① LED all-lit mode (displays KEY/FL/LED.)
- 2 Fluorescent indicator tube all lit mode
- 3 CHECK 1 lit mode (partially lit)
- ◆ CHECK 2 lit mode (Partially lit)
- (5) Key check mode (Displays JOG = 0, KEY = 0)
- Note 1) When the three buttons pressed to enter the LED all lit mode are released together, the LED all lit mode will remain on. When released separately, the next Fluorescent indicator tube all lit mode will be set.
- Note 2) The LEDs will light up sequentially after the all lit mode each time the buttons are pressed or the SELECTOR knob is rotated.
- Note 3) In the key check mode, each time the button is pressed, the "KEY =" number on the Fluorescent indicator tube increases. When the SELECTOR knob is rotated, the "JOG =" number on the Fluorescent indicator tube increases in the direction and decreases in the direction.
- Note 4) To end the above mode, remove the amplifier AC plug or turn OFF the PFJ-1 POWER switch.

Input Switching by Multiple Pressing

The desired input switching can be performed by the following multiple pressing.

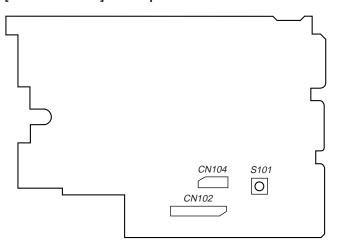
- button, REC button, and REPEAT button : Digital-in
- button, REC button, and CONTINUE button: Analog-in

Forced Reset Switch

The switch on the power board (S101) is the forced reset switch for IC201.

Press it for about one second after turning on the power after disassembling and assembling the unit again.

Parts Location [POWER BOARD] — Component side —



Note for replacement of IC121 and IC171 on the BD board

IC121 on the BD board of this unit has modified from CXD2535AR to CXD2535BR due to an improvement.

Some contents of nonvolatile memory in the IC171 are modified according to this modification. When replacing IC171, the previous contents for IC121 (CXD2535AR) are written as an initialized value from the system control IC. (When replacing IC171, turn the power on once to write an initialized value.)

In case the IC171 on the BD board is replaced, which uses CXD2535BR to IC121, see the following procedure to rewrite the contents of nonvolatile memory. As for replacement of IC121, use CXD2535BR to rewrite the contents of IC171.

Table Comparison between CXD2535AR and CXD2535BR regarding the contents of nonvolatile memory

ADDRESS	CXD2535AR	CXD2535BR
15	90	93
2D	33	1A
2E	33	1A

How to rewrite the nonvolatile memory

- ① Press the button, EDIT/NO button and REPEAT button at the same time when the POWER of set is turned OFF (Be sure to release the three buttons at the same time.)
- ② Turn the <u>SELECTOR</u> knob to be displayed "EEP MODE". If the <u>ENTER/YES</u> button is pressed, the display will be changed to "EEP ** @@". (**: Address, @@: data)
- 3 Turn the SELECTOR knob to be displayed "EEP 15 @@".
- (4) If the SELECTOR knob is pressed, "EEP 15 @@ > @@" will be displayed. So turn the SELECTOR knob to be displayed "EEP 15 @@ > 93".
- (5) Pressing the ENTER/YES button, "Complete!" is displayed once, "EEP 15 93" is displayed, and the data is rewritten.
- (6) As for the address 2D and 2E, rewrite each of them to "1A" following the steps (3) to (5) as well.
- ① After the all modification are complete, press the EDIT/NO button to be displayed "EEP MODE".
- (a) Press the REPEAT button. In case a disc is unloaded, the display "STANDBY" will be go on and off, then unplug the power plug. In case a disc is loaded, "STANDBY" is displayed once and the disc is ejected. After that, unplug the power plug from an outlet to be out from the EEP rewriting mode.

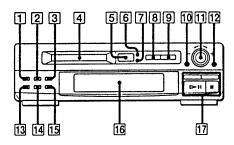
Note: The modification in the contents of nonvolatile memory is not reflected if the power is not turned off once.

SECTION 2 GENERAL

Index to Parts and Controls

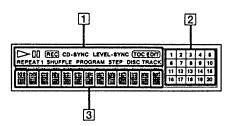
Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

Front Panel



- 1 REPEAT button (13)
- 2 DISPLAY button (12)
- 3 SCROLL button (21)
- 4 Disc compartment (11)
- 5 △ EJECT button (11)
- 6 DIGITAL IN indicator (14)
- 7 ATTENUATOR indicator (15)
- 8 CD SYNC button (15)
- 9 REC button (16)
- 10 EDIT/NO button (15, 17, 18 21)
- 11 SELECTOR control (11, 12, 16, 18 21)
- 12 ENTER/YES button (13, 15, 17 21)
- 13 CONTINUE button (12, 13)
- 14 SHUFFLE button (12)
- 15 PROGRAM button (13)
- 16 Display window (11, 12, 15, 18 21)
- 17 MD deck operating buttons
 - ◄</>►► (manual search) (12, 21)
 - **▶** [(play/pause) (11, 15, 20)
 - (stop) (11, 15, 18)

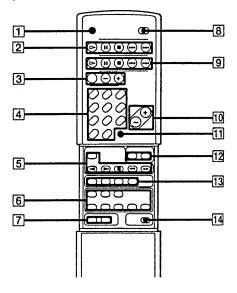
Display Window



- 1 MD status indication (11, 15, 18)
- [2] Music calendar (11, 18)
- 3 Playing time/track number/title indication (11 13, 18, 21)

Remote

For further operation, refer to the pages in parentheses.



- 1 SLEEP button (25)
- 2 MD operating buttons
 - (play) (11)
 - [] (pause) (11)
 - **(stop)** (11)
 - H◀/►► (AMS**) (11)
- 3 Tuner operating buttons (22) BAND button

PRESET (+/-) buttons

- 4 CD/Tuner/MD numeric buttons (8, 12, 23)
- Tape operating buttons
 TAPE button

 - ► (front side play)
 - (stop)
 - ◄◄ (fast leftward)
 - ►► (fast rightward)
- 6 CD operating buttons

CD button (8)

REPEAT button (10)

TIME button (7)

DISC 1 - 3 buttons (7)

CHECK button (9)

CLEAR button (9)

7 TUNER button DISPLAY button (23) This section is extracted from instruction manual.

- 8 SYSTEM POWER switch (7)
- 9 CD operating buttons

 - 11 (pause) (7)
 - **(stop)** (7)
 - H◄ / ►► (AMS**) (8)
- 10 VOLUME (+/-) buttons (7, 11, 24, 27)
- 11 MUTING button (24)
- 12 VIDEO 1 button (28) VIDEO 2 button (28)
- MD operating buttons REPEAT button (13) DISPLAY button (12)
 - SCROLL button (21)
- 14 SOURCE DIRECT button (24)
- ** AMS: Automatic Music Sensor

Recorded MDs **Editing**

Erasing Recordings (erase function) Moving Recorded Tracks (move function)

Dividing Recorded Tracks (divide function)

Combining Recorded (combine function)

Labeling Recordings (title function)

3 2

2 Turn SELECTOR until the track number you want to erase appears in the

Erasing Recordings

(erase function)



You can erase recorded tracks simply by specifying the corresponding track number. Unlike cassette tapes, you do not have to record over a previously recorded track in

There are three methods for erasing a

recorded material: order to erase it.

3 Press EDIT/NO repeatedly until "Erase 7" appears in the display.



4 Press ENTER/YES.
"Erase ??" appeares in the display.

It is best to start with the track with the highest track number to prevent the renumbering of tracks that have not been

When you erase two or more tracks

Erasing a single track
Erasing all tracks on an MD
Erasing a portion of a track

TRACK 7 Erase 22

When you erase a track, all tracks following the erased one are renumbered. For example, if you erase track 1, the original track 2 will be renumbered as track 1.

5 Press ENTER/YES again.
The track selected in step 2 is erased, and "Complete" appears for a few seconds.

To cancel during operation Press ■ on the MD deck.

6 Repeat steps 2 to 5 to crase more tracks.

You can erase a track and the track title simply by specifying its track number.

Example: Erasing B

Erasing a Single Track

To cancel during operation Press ■ on the MD deck.

Erasing a Portion of a

Track

If "Fease!! 7" appears in the display

The track was recorded or edited on
another MD deck and is roord-protected. If E,
you do erase the track, press ENTER/YES
while this indication is displayed.

3 is erased.

A B C

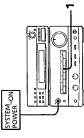
number 1

Erasing All Tracks on an

SYSTEM_ON POWER_ON

You can erase all recorded tracks, track titles and the disc title (all information recorded on the MD) at one time.

Note that once erased, they cannot be recovered.



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0 0

Moving Recorded (move function) **Fracks** 3,4

5 Turn SELECTOR until the new track

position appears.

New track position

You can change the order of tracks by moving a specific track to a track position you want.

After you move a track
The track numbers between the new and old track positions are automatically renumbered.

2 Press EDIT/NO repeatedly while the deck is stopped until "All Erase?" appears in the display.

1 Press MD to select the MD deck.

"Complete" appears for a few seconds and the order of tracks changes.

6 Press ENTER/YES.

To cancel during operation Press ■ on the MD deck.

Track number to be moved

Example: Moving C to track position 2

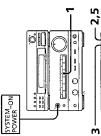


4 Press ENTEK/YES again.
When the disc title, all recorded tracks,
and track titles on the MD have been
erased, "Complete" appears for a few
seconds.

"All Erase??" appears in the display.

3 Press ENTER/YES.

Track C moves to track position 2.



By using the divide, erase, and combine functions, you can erase specific portions of

a track.

Example: Erasing a portion of track A

Portion to be erased

Track number

Z Turn SELECTOR until the track number you want to move appears in the display. T Press MD to select the MD deck.

+ #2 is erased.

A#3 B C

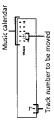
A#1

£rasing <

A#2 A#3 B

A#1

♦



#1 and #3 are combined.

Combining

3 Press EDIT/NO repeatedly until "Move ?" appears in the display.

4 Press ENTER/YES.

Chapter 5: Editing Recorded MDs

EN 数

Dividing Recorded (divide function) **Tracks**

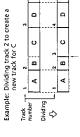
In the following cases, you can divide an existing track into two portions and mark a new track number to randomly access

When multiple tracks are recorded at one track position such as MDs recorded from an analog source.

When you want to mark a new track number in the middle of the track.

After you divide a track
The total number of tracks on the MD increases by one and all tracks following the divided one are renumbered.

4,6



Track 2 is divided, creating a separate track for C, and all the following tracks are renumbered.

continue to next page →

T Press MD to select the MD deck.

Chapter 5: Editing Recorded MDs

Combining Recorded Iracks

→ continued SYSTEM ON POWER ON

(combine function)

You can combine two consecutive tracks into one. This function is useful for combining several songs into a single medley, or several independently recorded portions into a single track. 3,6

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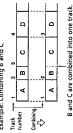
2,4

After you combine two tracks
The total number of tracks decreases by one and all tracks following the combined tracks are renumbered.

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Example: Combining 8 and C



¶ While playing the MD, press ►11 on the MD deck at the point where you **2** Press EDIT/NO repeatedly until "Divide ?" appears in the display. want to create a new track. The deck stands by for playing.

"Rehearsal" alternates with "Position ok?" in the display, and the starting position of the new track begins playing

The track number being played back flashes.

AMS KV to ute tive, reace.

The starting position of the new track is played back repeatedly.

The starting position can be adjusted to a maximum range between ~128 and ~127 in increments of about 0.08 second each within a track.

00

When the track has been divided, "Complete" appears for a few seconds and the newly created track begins

2 Turn SELECTOR until the second track of the two to be combined appears. For example, when combining tracks 3 and 4, turn SELECTOR until track

T Press MD to select the MD deck.

Combine the tracks again, then redivide the To undo a track division tracks if necessary.

To divide a track while recording

S

3 Press ENTER/YES. repeatedly.

4 If the starting position is incorrect, press EDIT/NO. If it is correct, skip to step 6.

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While monitoring the sound, turn SELECTOR to find the starting position

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of the new track.

6 Press ENTER/YES.

The new track will have no track title even if the original track was labeled.

To cancel during operation Press II on the MD deck.

3 Press EDIT/NO repeatedly until "Combine ?" appears in the display.

Track number to be combined

乛

Use the track marking function.

Chapter 5: Editing Recorded MDs

Z Press # to stop playing when you assign Press >-II to pause the track to be labeled when you assign a track title. "Rehearsal" alternates with "Track ok?" in the display. The point where the two tracks will join (e.g., the end of the first track and the beginning of the second track) repeatedly plays back.

4 Press ENTER/YES.

If the track is playing, be sure to finish abeling the track fit before it ends If the track ends before you have completed the labeling procedure, the characters already entered are not recorded and the track will remain 3 Press EDIT/NO repeatedly until "Name in?" appears in the display. unlabeled. When the tracks have been combined, "Complete" appears for a few seconds. If both of the combined tracks have track titles, the title of the second track is 5 If the point is correct, press ENTER/YES.

To cancel during operation Press
on the MD deck.

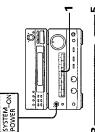
4 Press ENTER/YES. A cursor flashes in the display.

To undo a track combination
Divide the tracks again, then repeat the
combine function with the correct tracks if necessary. If "Sorny" appears in the display
The trackes cannot be combined. This
Sometimes happens when you have edited
the same track many times. This is due to a
retrivital limitation of the MD system, not a
mechanical error.

5 Turn SELECTOR until the desired character appears in the display. The selected character flashes.

Labeling Recordings (title function)

You can create titles for your recorded MDs and tracks by using uppercase and lowercase letters, numbers and symbols. You can enter up to about 1,700 characters per disc.



6 Press ▶▶.

The cursor shifts to the right and stands by for the input of the next character.

To enter a space
Press ▶▶ on the MD deck while the cursor is flashing.

7 Repeat steps 5 and 6 until you have entered the entire title. 00

If you entered the wrong character Press ←← or ▶▶ on the MD deck until

Next character

the character to be corrected starts flashing, and repeat steps 5 and 6. To erase a character

Press ← or ▶▶ on the MD deck until
the character to be erased starts flashing,
then press EDIT/NO. 1 Press MD to select the MD deck.

This completes the labeling procedure and the title appears in the display sequentially.

Fo cancel during operation Press II on the MD deck.

To check the titles
You can check the disc or track title by
pressing SCROLL.

Press SCROLL*	
To check the	

While the deck is stopped While the deck is playing

simultaneously. Note that once erased, titles cannot be

recovered.

1 While the deck is stopped, press EDIT/NO repeatedly until "Name Erase" appears in the display.

2 Press ENTER/YES.

"Name Erase?" appears in the display.

3 Press ENTER/YES again.

All titles are erased.

To cancel during operation.

Press ■ on the MD deck.

8 Press ENTER/YES.

Press SCROLL again to pause scrolling, and again to continue scrolling. Track title Disc title

To delete the title of the disc and the titles of all of the tracks (name erase function) You can erase all titles on an MD

You can use the following letters and symbols in titles.

When recording over the existing material You cannot assign a track title.

ABCDEFGHIJKLMNOPQRS TUVWXYZ_abcdefghijkl mnopqrstuvwxyz_(space)! # %&'()*+,--/012345678 9:;<=>?@

Chapter 5: Editing Recorded MDs

Guide to the Serial Copy Management System Precautions

System Limitations of MD

MD Display Messages

Troubleshooting Guide

Maintenance

· The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, eyen if the unit itself has been turned off.

On safety

The voltage selector is located at the bottom of the apparatus.

Index to Parts and Controls Specifications

Index

To protect an MD against accidental

To make it impossible to record on an MD, slide the tab in the direction indicated by the arrow, opening the slot. To allow recording, close the slot.

If you have any questions or problems concerning your stereo system, please consult your nearest Sony dealer.

Precautions

Rear of the disc



Slide the tab in the direction indicated by the arrow

110 – 120 V or 220 – 240 V AC, 50/60 Hz Adjustable with the

120 V AC, 60 Hz

U.S. and Canadian model Other models

voltage selector

fingerprints. However, malfunctioning may result if the cartridge itself is dirty or warped. Notes on handling MDs
Because the MD itself is housed in a
cartridge, you can handle it normally
without being concerned about dirt or

Do not open the shutter on the MD cartidge
Trying to force the shutter open will damage the shutter.



Unplug the system from the wall outlet (mains) if it is not to be used for an extended period of time. To disconner the cord framis lead, pull it out by the plug. Never pull the cord itself.
Should any solid object or liquid fall into the component, unplug the stereo system and have the component, nuplug the stereo system and have the component checked by qualified personnel before operating any further.

AC power cord must be changed only at the qualified service shop.

With the magnetically shielded type of speaker system, the speakers can be installed near a TV set. However, color irregularity may still be observed on the TV screen depending on the type of your TV set. In case color irregularity is observed on nearby TV screen

The use of optical instruments with this product will increase eye hazard.

Shutter Cartridge

If color irregularity is observed... Turn off the TV set once, then turn it on after 15 to 30 minutes.

On condensation in the CD player and the MD deck component If the system is brought directly from a cold to a warm location, or is placed in a very

Place the stereo system in a location with adequate ventilation to prevent heat build-up in the stereo system.

On installation

If color irregularity is observed again... Place the speakers farther away from the TV set.

damp room, moisture may condense on the tears inside the Up player or the MD deck. Should this occur, the CD player or the MD deck will not operate.

Remove the CD or the MD and leave the system turned on for about an hour until

he moisture evaporates.

Copy Management **Guide to the Serial** System

An MD recorded with digital input cannot be used to make another recording with digital input. As a digital audio component, this MD deck conforms with the Serial Copy Management System standards. The Serial Copy Management bystem standards are serial copy Management bystem restricts copies made by recording digital signals to first-generation copies only.

However, as subsequent reacording from the first-generation copy onto another recordable DAT tape or MD is possible through the analog input jack on the DAT or MD deck. There are three general rules that apply to this unit.

You can record from digital program sources (CDX, DATs or premastered MDs) onto a DAT tape or recordable MD via the digital input jeds on the DAT or MD deck. You cannot, however, record from this recorded DAT tape or MD onto another DAT tape or recordable MD with the digital input jeds on the DAT or MD deck.

30 30

EN 29

ī	riaybac Ootic	coaxi	Recordin		DAT or	Playbac	
CD player DAT deck	Playing MD deck	Optical cable or Digital output	connecting Digital input	Recording DAT deck or MD deck	First- generation A Day Yang or	-	Playing DAT deck or MD deck

Digital output jack

Audio connecting cord Digital Line (analog) input jack

Recording | DAT deck or MD deck

Tuner

Optical cable or Digital output coaxial digital | jack connecting | Digital input cable Digital input jack BS tuner Playing

Microphone amplifier Cassette deck

Recording DAT deck or MD deck

DAT deck or MD deck *

DAT tape or MD recorded via analog-to-digital connection

DAT deck or MD deck Ð Digital Line (analog)
output jack

Digital Line (analog) input jack input jacks Optical cable or coaxial digital connecting cable

Recording | DAT deck or MD deck

You can record the digital input signal of a gights satellite roand-ast onto a DAT tape or recordable MD via the digital input jack on the DAT on MD deck which is capable of handling a sampling frequency of 32 kHz or 48 kHz. (This unit supports 44.1 kHz

You, you can then record the contents of this recorded DAT tape or MDG (first generation) onto another DAT tape or recordable MD via digital input jack on the DAT or MD deck to create a second-generation digital copy. Note, however, that on some BS tuners, second-generation digital copy in the top some by the possible.

Line (analog) input jacks

ical cable or \$\begin{align*} \text{Digital output} \\ \text{ial digital} \\ \text{ecting} \end{align*}

generation
DAT tape or
MD recorded
via digital-todigital

Audio

Digital Line (analog) output jack output Jacks

DAT deck or MD deck

Playing

Digital Line (analog) input jack

or coaxial digital connecting cable

Optical cable

Recording DAT deck or MD deck

You can record a DAT tape or MD on which an amalog record, PM broadcas, or other analog source was recorded onto another DAT has pee vMD via the DAT or MD deck's digital output jack. You cannot, however, make a second-generation DAT tape or MD copy via the DAT or MD deck's digital output jack.

Optical cable or (b) Digital output coaxial digital (connecting b) Digital input cable Line (analog)
output jacks
Line (analog) Digital input Recording | DAT deck or MD deck Recording DAT deck or MD deck DAT deck or MD deck DAT or MD O O DAT or MD TOT O MD deck Audio connecting cord DAT deck Turntable CD player Playing Playing Second

generation

DAT tape or

MD recorded

MD recorded

digital-todigital-todigital-to-Digital input jack k DAT deck or MD deck

For Your Information

For Your Information

System Limitations of MD

The MiniDisc (MD) system is a different recording system than hint used with conventional casettes on DAT. As a result, there are several system initiations which may manifest themselves through the following symptoms. Although these do not indicate a malfunction, you should be aware of the causes of these situations.

"Disc Full" appears, even though the maximum recording time
(60 minutes, 74 minutes) has not been reached in the MD system, when the maximum number of tracks has been recorded, "Disc Full" appears in the displayin, regardless of the total playing time of the tracks. The maximum number of tracks that can be recorded to a SEI. I you want to record additional tracks, either crase unnecessary tracks or record them on a second MD.

"Disc Full" appears, even though recording time and unused tracks

Fluctuations in emphasis within tracks are sometimes interpreted as track intervals, incrementing the track count and causing "Disc Full" to appear in the display.

The remaining time on the MD does not increase, even though several short tracks have been erased. Because short segments of 12 seconds or less are ignored when the time remaining on an MD appears, resting several short tracks may not always result in that amount of time being added to the time remaining.

Combining is not always possible Sometimes it is not possible to combine an edited track.

The sum of the time recorded on an MD and the time remaining may not always equal the maximum recording time (60 minutes, AT minutes).

Normally, the smallest unit of recording is one "Quister" (about two seconds). Even if a recorded segment is less than two seconds, two seconds worth of space is used. As a result, the time actually used on an MD is less than the maximum recording time. Furthermore, if an MD has a scratch, the affected portors is automatically ignored, so that the amount of evailable time decreases by a corresponding amount.

When searching in an edited track, the sound may occasionally be interrupted

Tracks may not be numbered accurately

When recording a CD through a digital connection, small extra tracks may be created due to the contents of the CD

In addition, when track marking is performed automatically with Level Sync OW, the track numbers may not be written correctly, depending on the material being recorded.

The digital signal input was interrupted during digital

Din Unlock

recording.

Disc Error Disc Full

The inserted MD is damaged, or does not contain a TOC.

"TOC Reading" appears for a long

If the inserted recordable MD is brand new, "TOC Reading" appears in the display longer than for MDs that have been used.

You cannot make recording because there is no time remaining on the disc. (See "System Limitations of

Divide one recorded track into two tracks? (Divide

Divide?

Function)

Limitations when recording over an existing track.

• The correct remaining recording time may not be displayed.

• You may not be able to record over a track if that track has been recorded over several times already. If this happens, erease the track using the Ease Function.

• The remaining recording time may be shortened out of proportion to the total

Erase?

Erase a single track on an MD? (Erase Function) You tried to combine from the first track on an MD, which is not possible.

Displayed when you remove the MD.

Impossible

recorded time.

Recording over a track to eliminate noise is not recommended since this may shorten the duration of the track.

You cannot label a track while recording over it.

The correct recorded/playing time may not be displayed during playback of monaural-format MDs

Change the order of the tracks by moving tracks to any desired position? (Move Function)

A high-level signal was input during analog

LEVEL Move?

recording.

There is no more space to store track or disc titles. You can enter up to 1792

Name Full

MD Display Messages

Create titles for your recorded MDs and tracks? (Title Function)

Name in? NO DISC

There is no MD in the deck. The inserted MD has a disc title but no tracks.

No Track

Over

The following table explains the various messages that appear in the display.

The end of the last track was reached while conducting a high-speed search.

The inserted MD is protected against erasure.
The MD deck is redoing the recording because of vibrations or disc scratches encountered during

Message	Meaning		reached while con
All Erase?	Erase all tracks on an MD?		high-speed search
	(Erase Function)	Protected	The inserted MD is
Attenuate?	Attenuate the recording		protected against e
	level during analog	Retry	The MD deck is re
	recording?		recording because
Autocut	The MD deck is pausing the		vibrations or disc:
	recording because silence		encountered durin
	continued for 30 seconds or		recording.
	more during digital	Retry Error	Because of numero
	recording.		vibrations or disc:
Blank Disc	The inserted recordable MD		continuous record
	is brand new or all tracks on		attempts have been
	the MD have been erased.		but normal record
Cannot	You cannot make a digital		possibie.
Copy	recording. (See "Guide to	+ 01101100	T open book o
	the Serial Copy	מונוומע	בחונוותב נה נובער המחב ב
	Management System".)		

continuous recording attempts have been made but normal recording is not possible.

vibrations or disc scratches,

Because of numerous

ned	
ntin	l
7	

You tried to edit in PROGRAM or SHUFFLE Combine two tracks into one? (Combine Function)

play mode.

Combine?

	Smart Space	The signal was input again after silence continued for
		30 seconds or less during digital recording.
	Sопу	You tried to combine tracks that cannot be combined.
	STANDBY	The material that was
	(Sumspin)	written on the MD properly, or else the unit does not
		remember what playback status was used last time.
	70C	The MD deck is updating
	(flashing)	the table of contents (TOC). Do not move the MD deck
		or pull out the power cord.
		If you do, the recorded material may not be saved
		normally. If you disconnect
		the power cord immediately
		after recording, you cannot save the recording.)
	70C	The MD deck is reading the
	Reading	contents of the MD.
ENT		(If the inserted recordable
6		Reading" appears in the
3.1		display longer than for MDs
		that have been used.)
	TRACK	The MD deck is recording a
	(lighting)	blank portion.
	TRACK	The MD deck is recording
	(flashing)	over existing material.
	Welcome	Displayed when you insert
		an MD.

For Your Information

SECTION 3 TEST MODE

3-1. Setting the Test Mode

Press the STOP (**1**) button, EDIT/NO (NO) button and REPEAT button at the same time when the POWER of set is turned OFF. (Be sure to release the Three buttons at the same time.)

3-2. Exiting the Test Mode

- 1. Press the REPEAT button.
- 2. In case a disc is unloaded, the display "STANDBY" will go on and off.
 In case a disc is loaded, the "STANDBY" is displayed once and the disc is ejected.
- 3. Unplug the power plug from an outlet.

3-3. Basic Operations of the Test Mode

All operations are performed using the SELECTOR knob, ENTER/YES (YES) button, and EDIT/NO (NO) button. The functions of these buttons are as follows.

Function	Contents
SELECTOR knob	Changes parameters and modes
YES button	Proceeds onto the next step. Finalizes input.
NO button	Returns to previous step. Stops operations.

3-4. Selecting the Test Mode

Eight test modes are selected by turning the SELECTOR knob.

Display	Contents
TEMP ADJUST	Temperature compensation offset adjustment
LDPWR ADJUST	Laser power adjustment
EFBAL ADJUST	Traverse adjustment
FBIAS ADJUST	Focus bias adjustment
FBIAS CHECK	Focus bias check
CPLAY MODE	Continuous playback mode
CREC MODE	Continuous recording mode
EEP MODE	Non-volatile memory mode *

For detailed description of each adjustment mode, refer to 4. Electrical Adjustments.

If a different adjustment mode has been selected by mistake, press the NO button to exit from it.

* The EEP MODE is not used in servicing. If set accidentally, press the NO button immediately to exit it.

3-4-1. Operating the Continuous Playback Mode

- 1. Entering the continuous playback mode
 - ① Set the disc in the unit (either MO or CD).
 - ② Rotate the SELECTOR knob and display "CPLAY MODE".
 - 3 Press the YES button to change the display to "CPLAY IN".
 - 4 When access completes, the display changes to "C1 = REEL AD = DED".

Note: The "" displayed are arbitrary numbers.

- 2. Changing the parts to be played back
 - ① Press the YES button during continuous playback to change the display to "CPLAY MID", "CPLAY OUT". When pressed another time, the parts to be played back can be changed.
 - ② When access completes, the display changes to "C1 = $\frac{1}{2}$ " AD = $\frac{1}{2}$ ".

Note: The "" displayed are arbitrary numbers.

- 3. Ending the continuous playback mode
 - ① Press the NO button. The display will change to "CPLAY MODE".
 - 2 Press the EJECT button and remove the disc.

Note 1: The playback start addresses for IN, MID, and OUT are as follows.

IN 40h cluster

MID 300h cluster

OUT 700h cluster

3-4-2. Operating the Continuous Recording Mode

- 1. Entering the continuous recording mode
 - ① Set the MO disc in the unit.
 - 2 Rotate the SELECTOR knob and display "CREC MODE".
 - 3 Press the YES button to change the display to "CREC IN".
 - 4 When access completes, the display changes to "CREC ([[[]]])" and REC lights up.

Note: The ";" displayed are arbitrary numbers.

- 2. Changing the parts to be recorded
 - ① When the YES button is pressed during continuous recording, the display changes to "CREC MID", "CREC OUT" and REC goes off. When pressed another time, the parts to be recorded can be changed.
 - ② When access completes, the display changes to "CREC (DDDD)" and REC lights up.

Note: The "" displayed are arbitrary numbers.

- 3. Ending the continuous recording mode
 - ① Press the NO button. The display changes to "CREC MODE" and REC goes off.
 - ② Press the EJECT button and remove the disc.
 - Note 1: The recording start addresses for IN, MID, and OUT are as follows.

IN 40h cluster

MID 300h cluster

OUT 700h cluster

- Note 2: The NO button can be used to stop recording anytime.
- Note 3: During the test mode, the erasing-protection tab will not be detected. Therefore be careful not to set the continuous recording mode when a disc not to be erased is set in the unit.
- **Note 4**: Do not perform continuous recording for long periods of time above 5 minutes.
- **Note 5 :** During continuous recording, be careful not to apply vibration.

3-4-3. Non-Volatile Memory Mode

This mode reads and writes the contents of the non-volatile memory.

It is not used in servicing. If set accidentally, press the NO button immediately to exit it.

3-5. Functions of Other buttons

Function	Contents
⊳II	Sets continuous playback when pressed in the STOP state. When pressed during continuous playback, the tracking servo turns ON/OFF.
	Stops continuous playback and continuous recording.
>>	The sled moves to the outer circumference only when this is pressed.
44	The sled moves to the inner circumference only when this is pressed.
● REC	Turns recording ON/OFF when pressed during continuous playback.
SCROLL	Switches between the pit and groove modes when pressed.
PROGRAM	Switches the spindle servo mode (CLVS and A).
DISPLAY	Switches the display when pressed.Returns to previous step. Stops operations.

Note: The erasing-protection tab is not detected during the test mode. Recording will start regardless of the position of the erasing-protection tab when the ● REC button is pressed.

3-6. Test Mode Displays

Each time the DISPLAY button is pressed, the display changes in the following order.

MODE display→Error rate display→Address display

1. MODE display

Displays "TEMP ADJUST", "CPLAY MODE", etc.

2. Error rate display

Error rates are displayed as follows.

C1 = 00000 AD = 00000

C1 = : Indicates C1 error

AD = : Indicates ADER

3. Address display

Addresses are displayed as follows.

h = 00000 s = 00000 (MO pit and CD)

h = 00000 a = 00000 (MO groove)

h = : Header address

s = : SUBQ address

a = : ADIP address

* is displayed when the address cannot be read.

3-7. Meanings of Other Displays

Diaploy	Contents								
Display	Light	Off	Blinking						
⊳	During continuous playback	STOP							
Ш	Tracking servo OFF	Tracking servo ON							
REC	Recording mode ON	Recording mode OFF							
CD SYNC	CLV LOCK	CLV UNLOCK							
TRACK	Pit	Groove							
DISC	High reflection	Low reflection							
LEVEL SYNC	CLV-S	CLV-A							
STEP	ABCD adjustment completed								
SHUFFLE	Focus auto gain successful Tracking auto gain successful		Focus auto gain successful Tracking auto gain failed						

3-8. Precautions for Use of Test Mode

① As loading related operations will be performed regardless of the test mode operations being performed, be sure to check that the disc is stopped before setting and removing it.

Even if the EJECT button is pressed while the disc is rotating during continuous playback, continuous recording, etc., the disc will not stop rotating.

Therefore, it will be ejected while rotating.

Always press the NO button first before pressing the EJECT button.

② The erasing-protection tab is not detected in the test mode. Therefore, when modes which output the recording laser power such as continuous recording mode and traverse adjustment mode, etc. are set, the recorded contents will be erased regardless of the position of the tab. When using a disc that is not to be erased in the test mode, be careful not to enter the continuous recording mode and traverse adjustment mode.

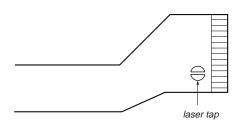
SECTION 4 ELECTRICAL ADJUSTMENTS

4-1. Precautions for Checking Laser Diode Emission

To check the emission of the laser diode during adjustments, never view directly from the top as this may lose your eye-sight.

4-2. Precautions for Use of optical pick-up (KMS-210A)

As the laser diode in the optical pick-up is easily damaged by static electricity, solder the laser tap of the flexible board when using it. Before disconnecting the connector, desolder first. Before connecting the connector, be careful not to remove the solder. Also take adequate measures to prevent damage by static electricity. Handle the flexible board with care as it breaks easily.



Optical pick-up flexible board

4-3. Precautions for Adjustments

 When replacing the following parts, perform the adjustments and checks with O in the order shown in the following table.

	Optical	ptical BD Board		
	Pick-up	IC171	D101	IC101, IC121, IC191
Temperature compensation offset adjustment	×	0	0	0
2. Laser power adjustment	0	×	×	0
3. Traverse adjustment	0	0	×	0
4. Focus bias adjustment	0	0	×	0
5. Error rate check	0	0	×	0

- 2) Set the test mode when performing adjustments.

 After completing the adjustments, exit the test mode.
- 3) Perform the adjustments in the order shown.
- 4) Use the following tools and measuring devices.
 - MD test disc (CD) TDYS-1 (Parts No. 4-963-646-01)
 - Laser power meter LPM-8001 (Parts No. J-2501-046-A)
 - Oscilloscope
 - Digital voltmeter
 - Thermometer
- When observing several signals on the oscilloscope, etc., make sure that VC and Ground do not connect inside the oscilloscope.

(VC and Ground will become short-circuited.)

4-4. Creating MO Continuously Recorded Disc

- * This disc is used in focus bias adjustment and error rate check. The following describes how to create a MO continuous recording disc.
- 1. Insert a MO disc (blank disc) commercially available.
- 2. Rotate the SELECTOR knob and display "CREC MODE".
- 3. Press the YES button and display "CREC IN".
- Press the YES button again to display "CREC MID".
 "CREC (0300)" is displayed for a moment and recording starts.
- 5. Complete recording within 5 minutes.
- 6. Press the NO button and stop recording.
- 7. Press the EJECT button and remove the MO disc.

The above has been how to create a continuous recording data for the focus bias adjustment and error rate check.

Note:

• Be careful not to apply vibration during continuous recording.

4-5. Temperature Compensation Offset Adjustment

Save the temperature data at that time in the non-volatile memory as $25~^{\circ}\text{C}$ reference data.

Note:

- 1. Usually, do not perform this adjustment.
- 2. Perform this adjustment in an ambient temperature of 22 °C to 28 °C. Perform it immediately after the power is turned on when the internal temperature of the unit is the same as the ambient temperature.
- 3. When D101 has been replaced, perform this adjustment after the temperature of this part has become the ambient temperature.

Adjusting Method:

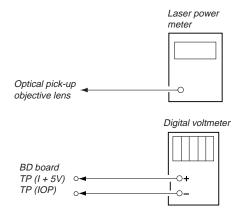
- 1. Rotate the SELECTOR knob and display "TEMP ADJUST".
- 2. Press the YES button and select the "TEMP ADJUST" mode.
- 3. "TEMP = "" and the current temperature data will be displayed.
- 4. To save the data, press the YES button. When not saving the data, press the NO button.
- 5. When the YES button is pressed, "TEMP = BUS SAVE" will be displayed for some time, followed by "TEMP ADJUST". When the NO button is pressed, "TEMP ADJUST" will be displayed.

Specifications:

The "TEMP = UE" should be within "E0 - EF", "F0 - FF", "00 - 0F", "10 - 1F" and "20 - 2F".

4-6. Laser Power Adjustment

Connection:



Adjusting Method:

- Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the ◀◀ button or button and move the optical pickup.)
 Connect the digital volt meter to TP (IOP) and TP (I+5V).
- Rotate the SELECTOR knob and display "LDPWR ADJUST". (Laser power: For adjustment)
- 3. Press the YES button twice and display "LD \$4B = 3.5 mW".
- 4. Adjust RV102 of the BD board so that the reading of the laser power meter becomes $3.4^{+0.1}_{-0}$ mW.
- 5. Press the YES button and display "LD \$ 96 = 7.0 mW". (Laser power: MO writing)
- Check that the laser power meter and digital voltmeter readings satisfy the specified value.

Specification:

Laser power meter reading: 7.0 ± 0.3 mW

Digital voltmeter reading : Optical pick-up displayed value

± 10%

(Optical pick-up label)



lop = 82.5 mA in this case $lop (mA) = Digital \ voltmeter \ reading (mV)/1 (<math>\Omega$)

- 7. Press the YES button and display "LD \$ 0F = 0.7 mW". (Laser power : MO reading)
- Check that the laser power meter at this time satisfies the specified value.

Specification:

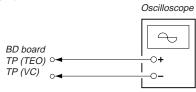
Laser power meter reading : $0.70 \pm 0.1 \text{ mW}$

Press the NO button and display "LDPWR ADJUST", and stop laser emission.

(The NO button is effective at all times to stop the laser emission.)

4-7. Traverse Adjustment

Connection:



Adjusting method:

- Connect an oscilloscope to TP (TEO) and TP (VC) of the BD board.
- 2. Load a MO disc (any available on the market).
- 4. Rotate the SELECTOR knob and display "EFBAL ADJUST".
- Press the YES button and display "EFBAL MO-W". (Laser power WRITE power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
- Adjust RV101 of the BD board so that the waveform of the oscilloscope becomes the specified value.
 (MO groove write power traverse adjustment)

(Traverse Waveform)



Specification A = B

- 7. Press the YES button and display "EFB = \$ \(\text{\tilie{\text{\tilie{\text{\tin}}}}}}}}}}}}}} \end{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}}\text{\text{\text{\texit{\text{\text{\text{\text{\text{\texi}\text{\text{\texi{\texi{\texi{\texi{\texi}\text{\text{\texi{\texi{\texi{\texi}\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\t
- 8. Rotate the SELECTOR knob so that the waveform of the oscilloscope becomes the specified value.

 (When the SELECTOR knob is rotated, the 0 of "EFB-0" changes and the waveform changes.) In this adjustment, waveform varies at intervals of approx. 3%. Adjust the waveform so that the specified value is satisfied as much as possible.

 (MO groove read power traverse adjustment)

(Traverse Waveform)



Specification A = B

- 9. Press the YES button, display "EFB = \$ \$ SAVE" for a moment and save the adjustment results in the non-volatile memory. Next "EFBAL MO-P" is displayed.
- 10. Press the YES button and display "EFB = \$ || MO-P".

 The optical pickup moves to the pit area automatically and servo is imposed.

- 11. Rotate the SELECTOR knob until the waveform of the oscilloscope moves closer to the specified value.
 - In this adjustment, waveform varies at intervals of approx. 3%. Adjust the waveform so that the specified value is satisfied as much as possible.

(Traverse Waveform)



Specification A = B

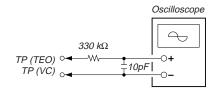
- 12. Press the YES button, display "EFB = 0 SAVE" for a moment and save the adjustment results in the non-volatile memory. Next "EFBAL CD" is displayed. The disc stops rotating automatically.
- 13. Press the EJECT button and remove the MO disc.
- 14. Load the test disc TDYS-1.
- 15. Press the YES button and display "EFB = $\mbox{\ensuremath{\mathbb{G}}}$ CD". Servo is imposed automatically.
- 16. Rotate the SELECTOR knob so that the waveform of the oscilloscope moves closer to the specified value. In this adjustment, waveform varies at intervals of approx. 3%. Adjust the waveform so that the specified value is satisfied as much as possible.

(Traverse Waveform)



- 17. Press the YES button, display "EFB = \$ @ SAVE" for a moment and save the adjustment results in the non-volatile memory.

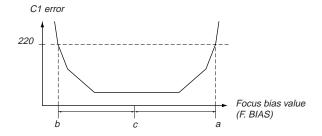
 Next "EFBAL ADJUST" is displayed.
- 18. Press the EJECT button and remove the test disc TDYS-1.
- **Note 1 :** Data will be erased during MO reading if a recorded disc is used in this adjustment.
- **Note 2 :** If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



4-8. Focus Bias Adjustment

Adjusting Method:

- Load a continuously recorded disc (Refer to "4-4. Creating MO Continuously Recorded Disc".).
- 2. Rotate the SELECTOR knob and display "CPLAY MODE".
- 3. Press the YES button twice and display "CPLAY MID".
- 4. Press the NO button when "C1 = 00000 AD = 000" is displayed.
- 5. Rotate the SELECTOR knob and display "FBIAS ADJUST".
- 6. Press the YES button and display " UUUUU a = UU". The first four digits indicate the C1 error rate, the two digits after [/] indicate ADER, and the 2 digits after [a =] indicate the focus bias value.
- 7. Rotate the SELECTOR knob in the clockwise direction and find the focus bias value at which the C1 error rate becomes 220.
- 8. Press the YES button and display " 0000/00 b = 00".
- Rotate the SELECTOR knob in the counterclockwise direction and find the focus bias value at which the C1 error rate becomes 220.
- 10. Press the YES button and display " 0000/00 c = 000".
- 11. Check that the C1 error rate is below 50 and ADER is 00. Then press the YES button.
- 12. If the "(III)" in "III III (III)" is above 20, press the YES button
 - If below 20, press the NO button and repeat the adjustment from step 2 again.
- 13. Press the NO button and press the EJECT button to remove the continuously recorded disc.
- **Note 1:** The relation between the C1 error and focus bias is as shown in the following figure. Find points a and b in the following figure using the above adjustment. The focal point position C is automatically calculated from points a and b.
- **Note 2 :** As the C1 error rate changes, perform the adjustment using the average vale.



4-9. Error Rate Check 4-9-1. CD Error Rate Check

Checking Method:

- 1. Load a test disc TDYS-1.
- 2. Rotate the SELECTOR knob and display "CPLAY MODE".
- 3. Press the YES button twice and display "CPLAY MID".
- 4. "C1 = 0000 AD = 00" is displayed.
- 5. Check that the C1 error rate is below 20.
- Press the NO button, stop playback, press the EJECT button, and remove the test disc.

4-9-2. MO Error Rate Check

Checking Method:

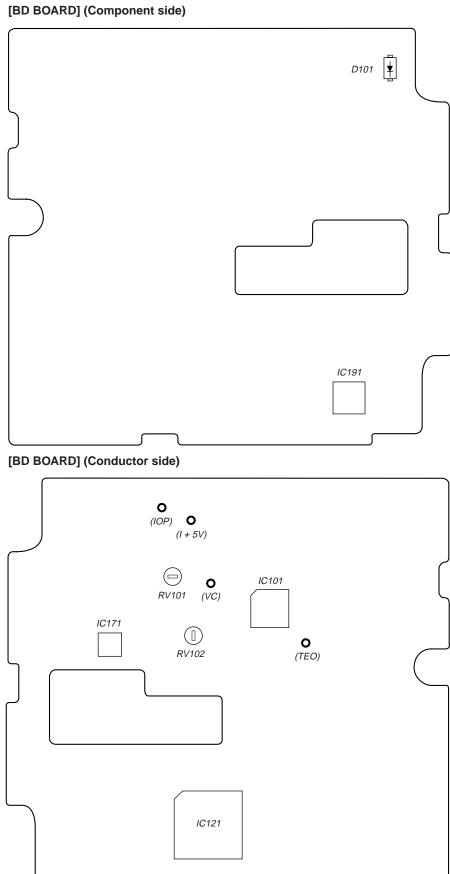
- Load a continuously recorded disc (Refer to "4-4. Creating MO Continuously Recorded Disc".).
- 2. Rotate the SELECTOR knob and display "CPLAY MODE".
- 3. Press the YES button twice and display "CPLAY MID".
- 4. "C1 = 0000 AD = 00" is displayed.
- 5. If the C1 error rate is below 50, check that ADER is 00.
- 6. Press the NO button, stop playback, press the EJECT button, and remove the continuously recorded disc.

4-10. Focus Bias Check

Change the focus bias and check the focus tolerance amount. **Checking Method:**

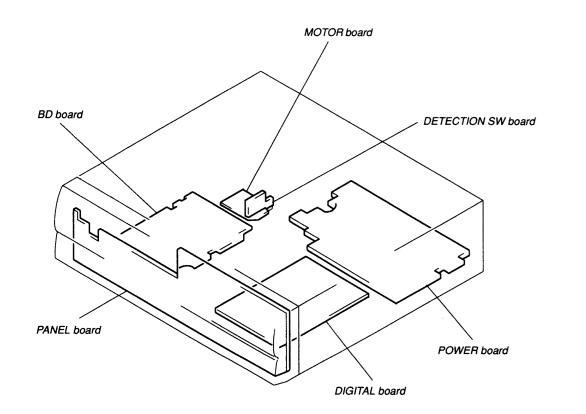
- Load a continuously recorded disc (Refer to "4-4. Creating MO Continuously Recorded Disc".).
- 2. Rotate the SELECTOR knob and display "CPLAY MODE".
- 3. Press the YES button twice and display "CPLAY MID".
- 4. Press the NO button when "C1 = 00000 AD = 000" is displayed.
- 5. Rotate the SELECTOR knob and display "FBIAS CHECK".
- 6. Press the YES button and display " UUUUU c = UU". The first four digits indicate the C1 error rate, the two digits after [/] indicate ADER, and the 2 digits after [c =] indicate the focus bias value.
 - Check that the C1 error is below 50 and ADER is 00.
- Press the YES button and display " UUUU/UU b = UU".
 Check that the C1 error is not below 220 and ADER is not above 00 every time.
- Press the YES button and display " 0000/00 a = 00".
 Check that the C1 error is not below 220 and ADER is not above 00 every time.
- Press the NO button, next press the EJECT button, and remove the continuously recorded disc.
- Note 1: If the C1 error and ADER are above 00 at points a or b, the focus bias adjustment may not have been carried out properly. Adjust perform the beginning again.

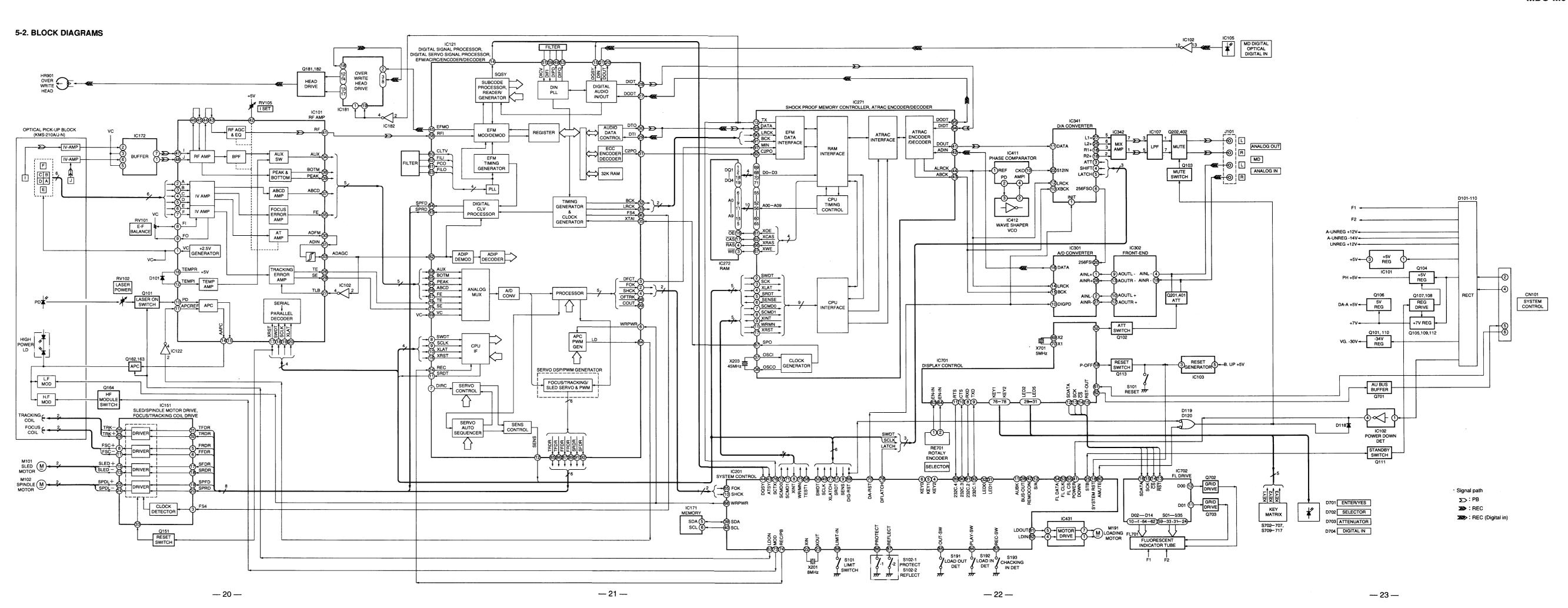
4-11. Adjusting Points and Connecting Points



SECTION 5 DIAGRAMS

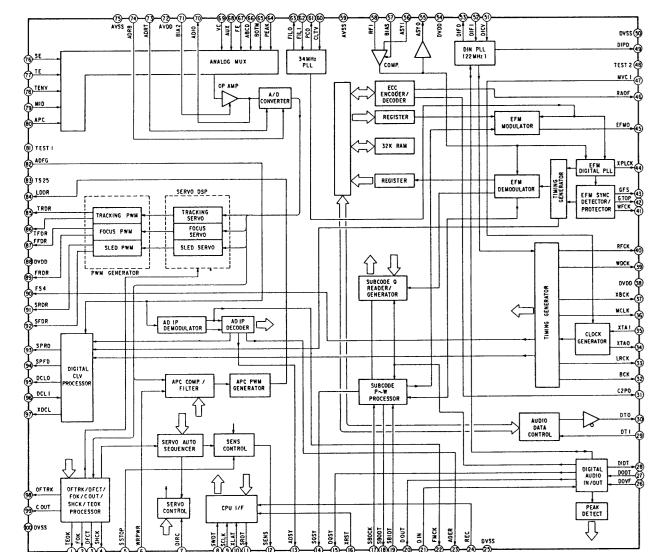
5-1. CIRCUIT BOARDS LOCATION



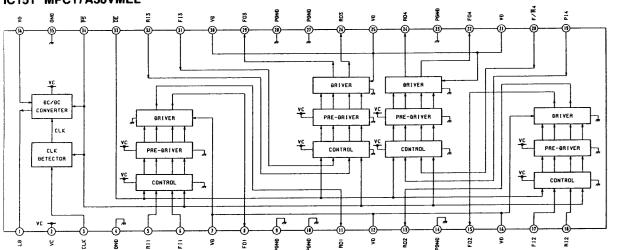


• IC Block Diagrams

IC121 CXD2535BR

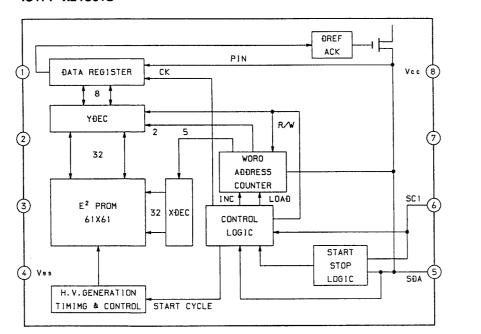


IC151 MPC17A38VMEL

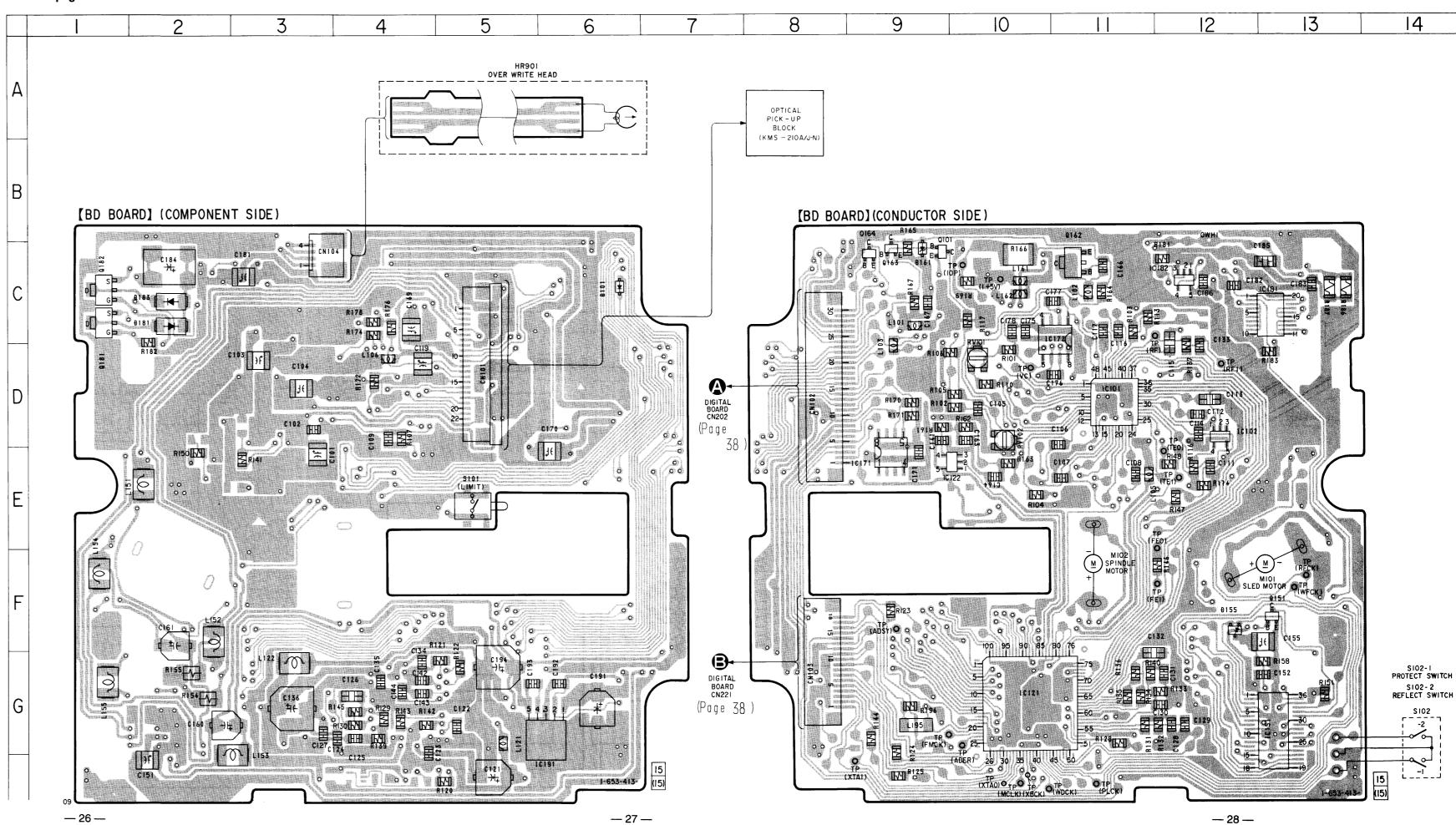


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IC171 X24C01S



5-3. PRINTED WIRING BOARD — RF SECTION — • See page 19 for Circuit Boards Location.



Note:

Through hole.

Pattern from the side which enable seeing.
(The other layers' patterns are not indicated.)

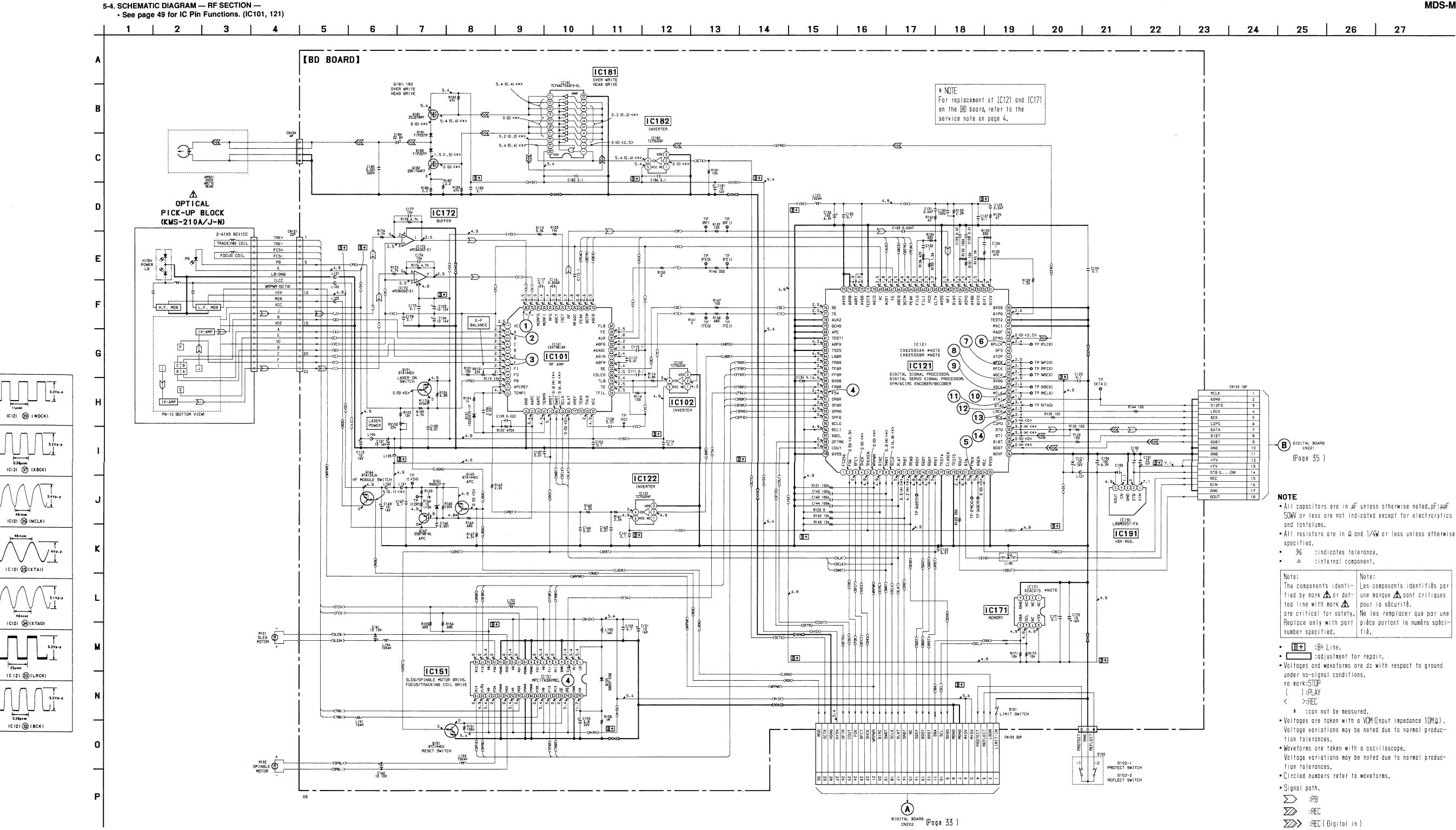
 Semiconductor Location

Ref. No. Location

IC101 D-10 IC102 D-11 IC121 F-9 IC122 D-9 IC151 G-12 IC171 D-8 IC172 C-10 IC181 C-12 IC182 C-11 IC191 G-5

Q101 B-9 Q151 F-12 Q162 B-10 Q163 B-8 Q164 B-8 Q181 C-1 Q182 C-1

D101 D155 D161 D181 D183



Waveforms

ICIOI 47,48 (1, J) APPROX . 0.35Vp-p(PLAY mode

THOUSE HEEDER ON HEALTHUM

ICIOI ② (A) APPROX. 0.18 Vp-p(PLAYmode)

ICIOI 6,7 (E,F)
APPROX. 0.08Vp-p(PLAY mode)

IC121 90(FS4),IC151 3 (CLK)

10121 22 (FMCK)

0.23 prec IC121 (4) (XPLCK)

135 µ sec

ICI2I (41) WFCK

5.2Vp-p

5-5. SCHEMATIC DIAGRAM — DIGITAL SECTION —

-- 33 --

• See page 48 for IC Block Diagrams. • See page 53 for IC Pin Functions. (IC201, 271, 301) 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | [DETECTION SW BOARD] IC301 **6**2 IC302 [MOTOR BOARD] POWER BOARD CN103 (Page 42) +++-+[DIGITAL BOARD] IC431 PLSY-SW> IC222 HVH17-01 TC/MU04F 2.2#H Waveforms L000000000 —<5YS.5Y>— <B. UP+5V> 22.579MHz IC411 (() (CKO) 8MHz IC201 ② (XOUT) —<STB>— 100 4.8√p-p 1000000 - 11.289MHz IC341 ⑥ (256FSO) 22.579MHz IC271 (SPO) 5.4Vp-p 5.6Vp-p *2 R276
US. CNÐ 330
EXCEPT 0
US. CNÐ 2.822MHz IC271 ③ (ABCK), IC301 ⑤ (BCK) IC271 99 (LRCK) All capacitors are in μF unless otherwise noted.pF:μμF 50WV or less are not indicated except for electrolytics and tantalums. 5.6Vp-p • All resistors are in Q and 1/4W or less unless otherwise 44kHz IC271 @ (ALRCK), IC341 @ (LRCK) \(\sigma \): internal component. 2.822MHz • B+ :B+ Line. • B- :B- Line. IC411 ① (REF) IC271 (BCK) • Voltages and waveforms are dc with respect to ground under no-signal conditions. 2.3Vp-p. no mark:STOP <REC/PB> (): PLAY (SCM80) (SCM81) < >: REC (()): LOAĐ IN 45.158MHz IC271 36 (OSCO) << >>: LOAÐ OUT IC411 @ (PD) ✓SENSE> * :can not be measured. • Voltages are taken with a VOM (Input impedance 10MQ). R244 3.6Vp-p Voltage variations may be noted due to normal produc-**B**+ tion tolerances. CHEAD. PWH. +5V> † AA • Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances. 22.579MHz IC411 4 (AMPI) • Circled numbers refer to waveforms. Signal path. ∑∑> :REC >>> :REC (Digital in) MCLK BOSH Abbreviation CND:Canadian model. F PANEL BOARB (Page 46) B BOARB (Page 32)

— 34 —

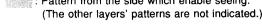
— 35 —

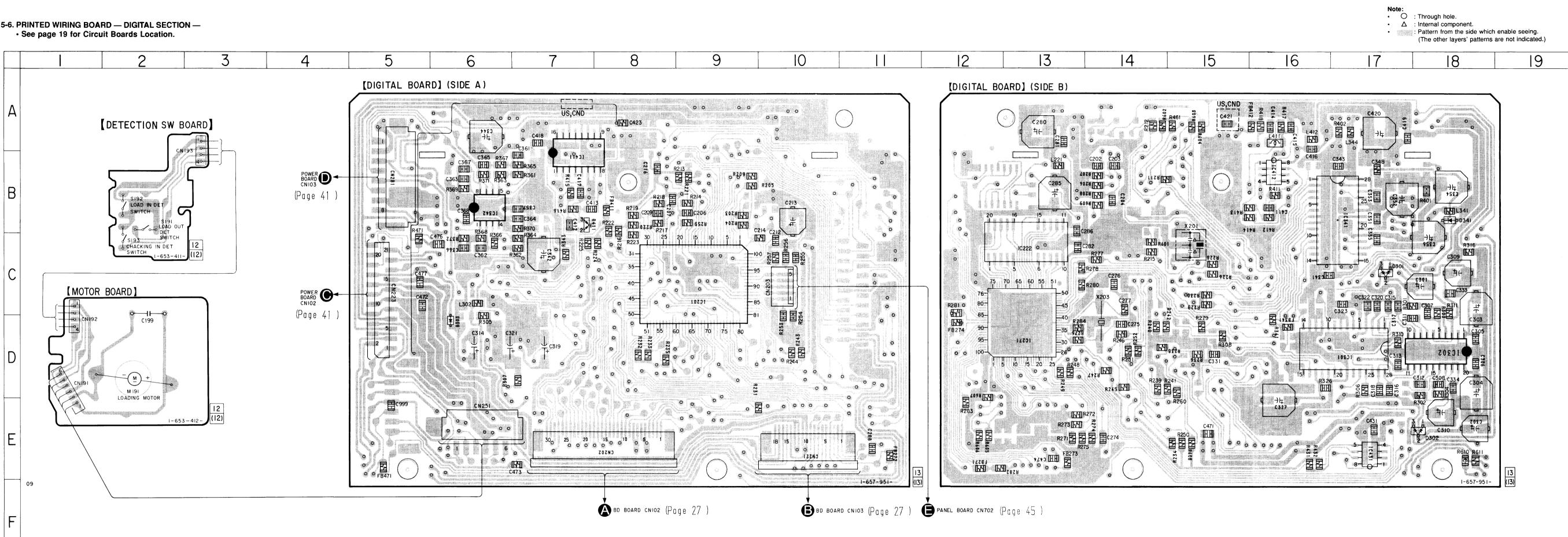
--- 36 ---

5-6. PRINTED WIRING BOARD — DIGITAL SECTION —

· See page 19 for Circuit Boards Location.







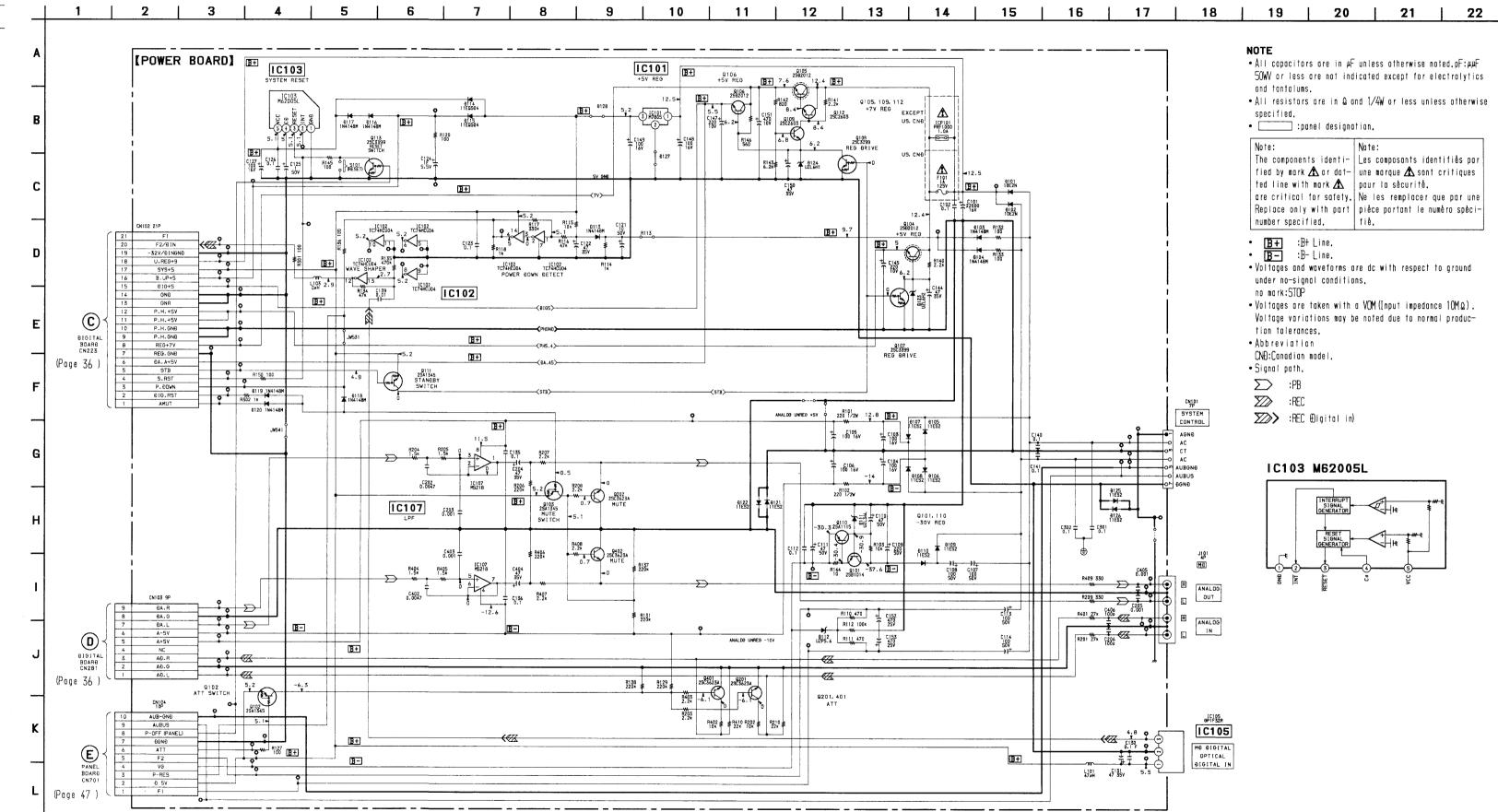
Semiconductor Location

Ref. No.	Location	
D301	C-17	
D302	E-18	
D303	D-6	
D341	B-18	
D411	B-7	
IC201	C-9	
IC271	D-13	ı
IC272	C-13	
IC301	D-17	
IC302	D-18	l
IC341	B-17	l
IC342	B-6	l
IC411	B-7	ı
IC412	B-16	l
IC431	E-17	

5-7. PRINTED WIRING BOARD — POWER SECTION — • See page 19 for Circuit Boards Location. IC105 CN101 MD DIGITAL Semiconductor R L ANALOG OUT SYSTEM OPTICAL DIGITAL IN ANALOG IN Location CONTROL [POWER BOARD] Ref. No. Location D101 D102 D103 D104 D105 D106 D107 D108 D109 D110 D111 D112 D113 D114 D115 D116 D117 D118 D119 D120 D121 D122 D123 D124 D125 D126 IC101 IC102 IC103 IC105 IC107 Q101 EQ102 EQ103 EQ104 DQ105 DQ106 E-4 Q107 D-5 Q108 D-4 Q109 E-3 Q110 E-7 Q111 F-5 Q201 D-1 Q202 C-4 Q401 D-1 Q402 B-4 JW149 JW150 1-658-364-(Page 37) Digital BOARD CN281 (Page 37) C DIGITAL BOARD CN223 PANEL BOARD CN701 (Page 45)

5-8. SCHEMATIC DIAGRAM — POWER SECTION —

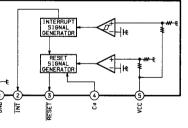
— 42 —



- All capacitors are in μF unless otherwise noted.pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Q and 1/4W or less unless otherwise
- ____:panel designation.

The components identi- Les composants identifiés par fied by mark \Lambda or dot- une marque \Lambda sont critiques ted line with mark A pour la sécurité. are critical for safety. Ne les remplacer que par une Replace only with part | pièce portant le numero spècinumber specified. fié.

- B+ :B+ Line. B- :B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- no mark:STOP
- Voltages are taken with a VOM (Input impedance $10M\Omega$). Voltage variations may be noted due to normal production tolerances.
- Abbreviation
- CNA:Canadian model
- ∑ :PB
- ∑∑> :REC
- > :REC (Digital in)



- • ---: parts extracted from the component side.
- Pattern from the side which enable seeing.
- Abbreviation
- CND: Canadian model.

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lote:

DISPLAY S703

1-658-365-

— 47 —

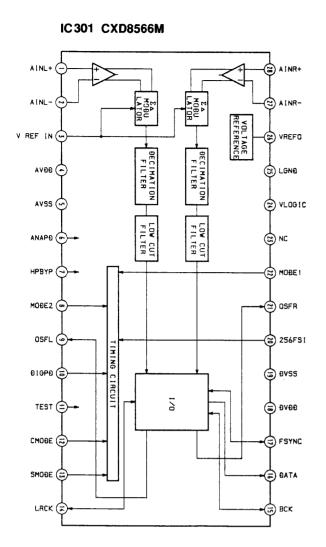
0702 0703 B O B O C O C O E O E O

- • parts extracted from the component side.
- Δ : Internal component.
- Pattern from the side which enable seeing.

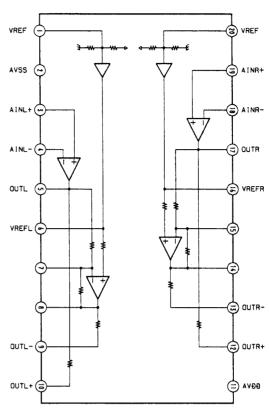
J**V**719

DIGITAL BOARD CN203 (Page 39)

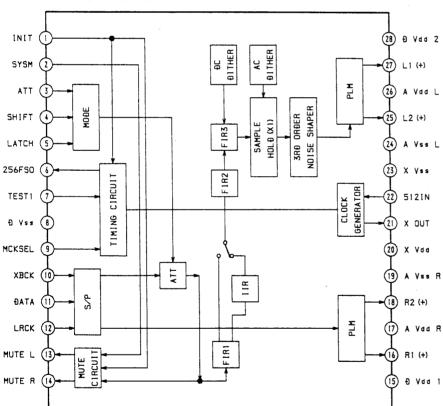
5-11. IC BLOCK DIAGRAMS — DIGITAL SECTION —



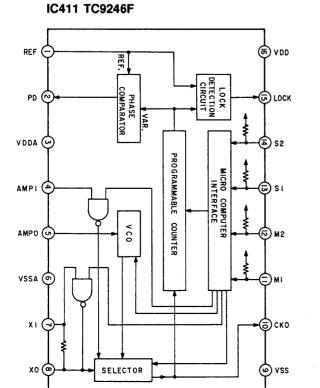
IC302 CXA8054M

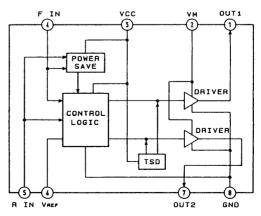


IC341 CXD8567AM



IC431 BA6287F





)

)

)

)

5-12. IC PIN FUNCTION

• IC101 RF Amplifier (CXA1981AR)

Pin No.	Pin Name	I/O	Function
1	VC	О	Middle point voltage (2.5V) generation output pin
2 to 7	A to F	I	Input of signal from optical block detector
8	FI	I	F operation amplifier input
9	FO	0	F operation amplifier output
10	PD	I	Front monitor. Connected to photo diode
11	APCREF	I	Input pin for setting laser power
12	TEMPI	I	Temperature sensor connection pin
13	GND	-	Ground pin
14	AAPC	О	APC LD amplifier output pin
15	DAPC	О	Not used (Opened)
16	TEMPR	0	Temperature sensor reference voltage output pin
17	XRST	I	Input of reset signal from system controller (IC201). Reset: "L"
18	SWDT	I	Input of write data signal from system controller (IC201)
19	SCLK	I	Input of clock signal from system controller (IC201)
20	XLAT	I	Input of latch signal from system controller (IC201)
21	VREF	О	Reference voltage output. Not used in this unit (Opened)
22	TENV	О	Not used (Opened)
23	THLD	I	Not used (Connected to VC)
24	VCC	_	Power supply pin (+5V)
25	TFIL	I	Not used (Opened)
26	TE	0	Output of tracking error signal to CXD2535BR (IC121)
27	TLB	I	Input pin of add signal to tracking error
28	CSLED	I	Sled error LPF pin
29	SE	О	Output of sled error signal to CXD2535BR (IC121)
30	ADFM	О	ADIP FM signal output
31	ADIN	I	Inputs ADIP FM signal by AC coupling
32	ADAGC	I	Connection pin of external capacitor for ADIP AGC
33	ADFG	0	Output of ADIP dual FM signal to CXD2535BR (IC121) (22.05 kHz ± 1 kHz)
34	AUX	О	Output of auxiliary signal to CXD2535BR (IC121)
35	FE	0	Output of focus error signal to CXD2535BR (IC121)
36	FLB	I	Not used (Opened)
37	ABCD	О	Output of light amount signal to CXD2535BR (IC121)
38	BOTM	0	Output of bottom hold signal of light amount signal to CXD2535BR (IC121)
39	PEAK	О	Output of peak hold signal of light amount signal to CXD2535BR (IC121)
40	RFAGC	I	Connection pin of RF AGC circuit external capacitor
41	RF	О	Output of playback EFM RF signal to CXD2535BR (IC121)
42	ISET	I	Internal circuit constant setting pin. 22 kHz BPF center frequency (Fixed at "H")
43	AGCT	I	Inputs RF signal by AC coupling
44	RFO	О	Output pin of RF signal
45	MORFI	I	Inputs MO RF signal by AC coupling
46	MORFO	О	Output pin of MO RF signal
47, 48	I, J	I	Input of signal from optical block detector

• IC121 Digital signal processor, digital servo processor, EFM/ACIRC encoder/decoder (CXD2535BR)

Pin No.	Pin Name	I/O	Function
1	FS256	О	11.2896 MHz clock output (MCLK). Not used in this unit (Opened)
		_	Output of FOK signal to system controller (IC201)
2	FOK	О	Outputs "H" when focus is set
3	DFCT	О	Outputs defect ON/OFF switching signal to CXD2536R (IC271)
4	SHCK	О	Outputs track jump detection signal to system controller (IC201)
5	SHCKEN	I	Track jump detection enable input. Not used in this unit. (Fixed at "H")
6	WRPWR	I	Inputs laser power switching signal from system controller (IC201)
7	DIRC	I	Not used in this unit. (Fixed at "H")
8	SWDT	I	Inputs write data signal from system controller (IC201)
9	SCLK	I	Inputs serial clock signal from system controller (IC201)
10	XLAT	I	Inputs serial latch signal from system controller (IC201)
11	SRDT	О	Outputs write data signal to system controller (IC201)
12	SENS	O (3)	Outputs internal status (SENSE) to system controller (IC201)
13	ADSY	О	ADIP sync signal output. Not used in this unit (Opened)
			Output subcode Q sync (SCOR) to system controller (IC201)
14	SQSY	0	Outputs "L" every 13.3 msec. Outputs "H" at all most mostly
			Outputs digital-in U-bit CD format subcode Q sync (SCOR) to system controller (IC201).
15	DQSY	О	Outputs "L" every 13.3 msec Outputs "H" at all most mostly
16	XRST	I	Inputs reset signal from system controller (IC201). Reset: "L"
17	TEST4	I	Test input (Fixed at "L")
18	CLVSCK	О	Not used in this unit (Opened)
19	TEST5	I	Test input (Fixed at "L")
20	DOUT	О	Digital audio signal output pin (For optical output) Not used in this unit
21	DIN	I	Digital audio signal input pin (For optical input)
22	FMCK	О	ADIP FM demodulation clock signal output
23	ADER	0	ADIP CRC flag output. "H":Error
		_	Input of recording/playback switching signal from system controller (IC201)
24	REC	I	Recording: "H". Playback: "L"
25	DVSS	_	Ground pin (Digital)
26	DOVF	I	Digital audio output validity flag input pin. (Fixed at "L")
27	DODT	I	Input pin of 16bit data for digital audio output from CXD2536R (IC271)
28	DIDT	О	Output pin of 16bit data for digital audio input to CXD2536R (IC271)
29	DTI	I	Input pin of recording audio data signal from CXD2536R (IC271)
30	DTO	O (3)	Output pin of playback audio data signal to CXD2536R (IC271)
2.1	CORO		Outputs C2PO signal to CXD2536R (IC271). (Output indicating data error status)
31	C2PO	О	Playback: C2PO ("H"). Digital recording: D.In-Vflag. Analog recording: "L"
32	BCK	0	Outputs bit clock signal (2.8224 MHz) to CXD2536R (IC271) (MCLK)
33	LRCK	0	Outputs L/R clock signal (44.1 kHz) to CXD2536R (IC271) (MCLK)
34	XTAO	0	System clock (512 fs=22.5792 MHz) signal output. Not used in this unit (Opened)
35	XTAI	I	Input of system clock (512fs=22.5792 MHz) signal input from CXD2536R (IC271)
36	MCLK	0	MCLK clock (22.5792 MHz) signal output
37	XBCK	О	Pin 32 (BCK) inversion output
38	DVDD		Power supply pin (+5V) (Digital)
39	WDCK	О	WDCK clock (88.2 kHz) signal output (MCL)
40	RFCK	0	RFCK clock (7.35 kHz) signal output (MCLK)

Pin No.	Pin Name	I/O	Function
41	WFCK	О	WFCK clock (7.35 kHz) signal output
			(Playback: EFM decoder PLL. Recording: EFM encoder PLL)
42	GTOP	О	"H": Opens playback EFM frame sync protection window Not used in this unit (Opened)
43	GFS	О	"H": Playback EFM sync and interpolation protection timing match
			Not used in this unit (Opened)
44	XPLCK	О	EFM decoder PLL clock output (98 fs=4.3218 MHz)
45	EEMO		Falling edge and EFM signal edge match EFM signal output (Recording)
45	EFMO	О	Internal RAM overflow detection signal output (decoder monitor output)
46	RAOF	0	Outputs "H" when the disc rotation exceeds ± 4F jitter margin during playback
40	KAOI		Not used in this unit (Opened)
47	MVCI	I	Digital-in PLL oscillation input. Not used in this unit (Opened)
48	TEST2	I	Test pin (Fixed at "L")
10			Digital-in PLL phase comparison output
49	DIPD	O (3)	Internal VCO: (Frequency: Low \rightarrow "H"). External VCO: (Frequency: Low \rightarrow "L")
50	DVSS		Ground pin (Digital)
51	DICV	I (A)	Digital-in PLL internal VCO control voltage input
52	DIFI	I (A)	Filter input when digital-in PLL internal VCO is used
53	DIFO	O (A)	Filter output when digital-in PLL internal VCO is used
54	AVDD	_	Power supply pin (+5V) (Analog)
55	ASYO	О	Playback EFM full-swing output (L=VSS, H=VDD)
56	ASYI	I (A)	Playback EFM asymmetry comparate voltage input
57	BIAS	I (A)	Playback EFM asymmetry circuit constant current input
58	RFI	I (A)	Inputs playback EFM RF signal from CXA1981AR (IC101)
59	AVSS		Ground pin (Analog)
60	CLTV	I (A)	Decoder PLL master clock PLL VCO control voltage input
61	PCO	O (3)	Decoder PLL master clock PLL phase comparison output
62	FILI	I(A)	Decoder PLL master clock PLL filter input
63	FILO	O (3)	Decoder PLL master clock PLL filter output
64	PEAK	I (A)	Inputs peak hold signal for light amount signal from CXA1981AR (IC101)
65	BOTM	I (A)	Inputs bottom hold signal for light amount signal from CXA1981AR (IC101)
66	ABCD	I (A)	Light amount signal from CXA1981AR (IC101)
67	FE	I (A)	Input of focus error signal from CXA1981AR (IC101)
68	AUX1	I (A)	Input of auxiliary signal from CXA1981AR (IC101)
69	VC	I (A)	Input of middle point voltage (+2.5V) from CXA1981AR (IC101) A/D converter input signal monitor output
70	ADIO TEST2	O (A)	Test input (Fixed at "L")
71 72	TEST3 AVDD	I (A)	Power supply pin (+5V) (Analog)
73	ADRT	I (A)	A/D converter operation range upper limit voltage input (Fixed at "H")
74	ADRB	I (A)	A/D converter operation range lower limit voltage input (Fixed at "L") A/D converter operation range lower limit voltage input (Fixed at "L")
75	AVSS		Ground pin (Analog)
76	SE	I (A)	Input of sled error signal from CXA1981AR (IC101)
77	TE	I (A)	Input of tracking error signal from CXD1981AR (IC101)
78	AUX2	I (A)	Auxiliary input pin 2. Not used in this unit. (Fixed at "L")
79	DCHG	I (A)	Connected to Ground pin
80	APC	I (A)	Laser APC input. Not used in this unit (Fixed at "L")

Pin No.	Pin Name	I/O	Function
81	TEST1	I	Test pin (Fixed at "L")
82	ADFG	ı	Input of ADIP dual FM signal from CXA1981AR (IC101) (22.05 kHz ± 1 kHz)
62	ADro	1	(TTL Schmidt input)
83	TS25	I	Test pin (Fixed at "L")
84	LDDR	О	Laser APC signal output
85	TRDR	0	Tracking servo drive signal output (–)
86	TFDR	0	Tracking servo drive signal output (+)
87	FFDR	0	Focus servo drive signal output (+)
88	DVDD	_	Power supply pin (+5V) (Digital)
89	FRDR	0	Focus servo drive signal output (–)
90	FS4	0	176.4 kHz clock signal output (MCLK)
91	SRDR	0	Sled servo drive signal output (–)
92	SFDR	0	Sled servo drive signal output (+)
93	SPRD	0	Spindle servo drive signal output (–)
94	SPFD	0	Spindle servo drive signal output (+)
95	DCLO	0	Not used in this unit (Opened)
96	DCLI	I	Not used in this unit (Fixed at "H")
97	XDCL	О	Not used in this unit (Opened)
98	OFTRK	О	Off track signal output
99	COUT	0	Traverse count signal output
100	DVSS	_	Ground pin (Digital)

^{*} (3) of I/O is 3-state output, (A) is analog output.

• IC201 System Control (M37610MD-067FP)

Pin No.	Pin Name	I/O	Function	
1	C.SET1	I		
2	C.SET2	I	Not used in this unit (Fixed at "L")	
3	KEY3	I		
4 to 6	KEY 2 to KEY 0	I	Not used in this unit (Fixed at "H")	
7	_	I	Not used in this unit (Fixed at "L")	
8	XINT	I	Interrupt status input from CXD2536R (IC221)	
9	SENS	I	Internal status (SENSE) input from CXD2535BR (IC121)	
10	SHCK	I	Track jump signal input from CXD2535BR (IC121)	
11	AUBK	I	Not used in this unit (Fixed at "L")	
12	Ī√A	О	Not used in this unit (Opened)	
13	BEEP SW	I	N	
14	REC/OTHER	0	Not used in this unit (Fixed at "L")	
15	BEEP	О	Not used in this unit (Opened)	
16	F. BIAS/C2	I	Not used in this unit (Fixed at "L")	
17	GND (CNVSS)	_	Ground pin	
			System reset signal input	
18	SYSTEM RST	I	"L" is input for several hundreds msec after the power supply activation, then it is changed	
			to "H".	
19	XIN T	I		
20	XOUT T	0	Not used in this unit. (Fixed at "L")	
21	GND	_	Ground pin	
22	XIN	I	Clock input (8MHz)	
23	XOUT	0	Clock output (8MHz)	
24	+5V	_	Power supply (+5V)	
25	STB	0	Strobe signal output to the power supply circuit. ON: "H", standby: "L".	
26, 27	MIC SW	I		
28	BUS OUT	О		
29	_	О		
30	LED 2	О		
31	LED 1	О		
32	LED 0	О	Not used in this unit (Fixed at "L")	
33	C1	I		
34	ADER	I		
35	NC	I		
36	MASTER/SLAVE	I		
37, 38	JOG 1, JOG 0	I		
39	SDA	I/O	Data signal input/output with the backup memory (IC171)	
40	SCL	О	Clock signal output to the backup memory (IC171)	
41	POWER DOWN	I	Power down detection input. Normally, "H" is input.	
42	REMOCON	I	Remote control signal input. Not used in this unit (Fixed at "H")	
42	COCK		ATP addressing or subcode Q sync (SCOR) input from CXD2535BR (IC121).	
43	SQSY	I	"L" is input every 13.3 msec. Normally "H".	
4.4		_	Digital-in U-bit CD format subcode Q sync (SCOR) input from CXD2535BR (IC121).	
44		I	"L" is input every 13.3 msec. Normally "H".	
45 to 47	_	0	Not used in this unit (Fixed at "L")	

Pin No.	Pin Name	I/O	Function	
48	_	I	Not used in this unit (Fixed at "L")	
49	SCLK	0	Clock signal output to the serial bus	
50	SWDT	0	Write data signal output to the serial bus	
51	SRDT	I		
52	_	I	Read data signal input from the serial bus	
53	FLCLK	0		
54	FLDATA	0		
55	FLCS	0	Not used in this unit (Fixed at "L")	
56	_	I		
57	TEST 0	I		
58	TEST 1	0	Reset signal output to CXD2536R (IC221)	
59, 60	_	I		
61	AFAST	I	Not used in this unit (Fixed at "L")	
62	SLOW	I		
63	LDON	О	Laser ON/OFF control output. "H": Laser ON.	
64	PIT/GRV	I	Pit/groove detection input. "H" is input for the playback-only disc or TOC area. Not used in this unit. (Fixed at "L")	
65	FOK	I	FOK signal input from CXD2535BR (IC121) "H" is input when focusing.	
66	MON	I	Not used in this unit. (Pull down when input.)	
67	LOCK	0	Not used in this unit. (Full down when output.)	
68	WRPWR	0	Laser power switching signal output to the optical block and CXD2535BR (IC121)	
	Will Will		Reset signal output to CXD1981AR (IC101) and CXD2535BR (IC121) and motor driver	
69	DIG RST	О	(IC151). Reset: "L".	
70	DA RST	О	Reset signal output to the D/A converter (IC341), A/D converter (IC301). Reset: "L".	
71, 72	SCMD 1, SCMD 0	0	Serial command control mode output to CXD2536R (IC221)	
73	MOD	0	Laser modulation switching signal output Playback power: "L", stop: "H". Recording power:	
74	REC/PB	О	Record/playback switching signal output to CXD2535BR (IC121). Recording: "H", playback: "L".	
75	WR/MN	О	Write/monitor mode switching signal output to CXD2536R (IC221)	
76	SCTX	0	Write data transfer timing output to CXD2536R (IC221) Also serves as ON/OFF output of the magnetic head.	
77	XLATCH	0	Latch signal output to the serial bus	
78	DALAT	0	Latch signal output to the D/A converter (IC341).	
79	DF MUTE	0		
80	AMUTE	0	Line out muting output	
	1		6 TH THE	

Pin No.	Pin Name	I/O	Function
81	LDOUT	О	Loading motor (M101) control output*1
82	LDIN	О	Loading motor (M191) control output*1
83	REC-SW	I	Detection input from the chucking-in switch (S193). When chucking: "L".
84	PLAYSW	_	Detection input from the loading-in switch (S191).
04	PLAISW	I	When the magnetic head is lowered: "L", others: "H".
85	OUTSW	_	Detection input from the loading-out switch (S192).
83	0013W	I	When loaded out: "L", others: "H".
86	PROTECT	т.	Recording-protect claw detection from the protect detection switch (S102-1).
80	PROTECT	I	When protected: "H".
87	DEEL ECT	т	Disc reflection rate detection from the reflect detection switch (S102-2).
87	REFLECT	I	Disc with lower reflection rate: "H".
88	LIMIT IN	I	Detection from the limit-in switch (S101).
00	LIMIT IN		Sled limit-in: "L".
89	232C.4	О	UART data transmission request signal output to display control (IC701).
90	232C.3	I	UART data transmission request signal input from display control (IC701).
91	232C.2	I	UART data input from display control (IC701).
92	232C.1	О	UART data output to display control (IC701).
93 to 96	_	О	Not used in this unit (Fixed at "L")
97	AVSS (AGND)	_	Ground pin
98	VREF (+5V)	I	Reference voltage input (+5V)
99	TIMER REC/PLAY	I	Timer recording/playback/OFF switching input. Not used in this unit (Fixed at "L")
100	INPUT SELECT	т	Select signal input from input signals (analog/digital input).
INPUT SELECT	INFUI SELECI	I	Analog input: "L", digital input: "H". Not used in this unit (Fixed at "L")

* 1 Loading motor control

Operation Pin	IN	OUT	BRAKE
LDIN 82 pin	"H"	"L"	"H"
LDOUT 81 pin	"L"	"H"	"H"

• IC271 Shock-Proof Memory Controller, ATRAC Encoder/Decoder (CXD2536R)

Pin No.	Pin Name	I/O	Function	
1	VDD	<u> </u>	Power supply pin (+5V)	
2	SWDT	I	Input of write data signal from system controller (IC201)	
3	SCK	I	Input of serial clock signal from system controller (IC201)	
4	XLAT	I	Input of serial latch signal from system controller (IC201)	
5	SRDT	O/Z	Output of read data signal to system controller (IC201)	
6	SENSE	O/Z	Output of internal status (SENSE) to system controller (IC201)	
7	SCMD0	I	Input of serial command control mode from system controller (IC201) (Fixed at "H")	
8	SCMD1	I		
9	XINT	О	Output of interrupt status to system controller (IC201)	
10	RCPB	I	Recording/playback switching input. Not used in this unit (Fixed at "L")	
11	WRMN	I	Input of write/monitor mode switching signal (Fixed at "L")	
	TX	<u> </u>	Input of write data transmission timing from system controller (IC201)	
12		I	Also used as magnetic field head ON/OFF output	
13	VSS	_	Ground pin	
14	SICK	I	Chip reservation pin (Fixed at "L")	
15	IDSL	I		
16	XILT	I	Chip reservation pin (Fixed at "H")	
17	XRST	I	Input of reset signal from system controller (IC201). Reset: "L"	
18 to 21	TS0 to TS3	I	Test pin (Fixed at "L")	
22	EXIR	I	Chip reservation pin (Fixed at "L")	
23	SASL	I	Block selection in single use. "L": ATRAC. "H": RAM controller (Fixed at "L")	
	SNGLE	I	Normally fixed at "L. Fixed at "H" when used as ATRAC or RAM controller for single.	
24			(Fixed at "L")	
25	VSS	<u> </u>	Ground pin	
2.	A ID CDD	0	Output pin of ATRAC and external audio block recording/playback mode signal.	
26	AIRCPB		Not used in this unit (Opened)	
27	XRQ	I/O	ATRAC I/F XRQ signal input/output pin. Not used in this unit (Opened)	
28	ADTO	I/O	ATRAC decode data signal input/output pin. Not used in this unit (Opened)	
29	ADTI	I/O	ATRAC encode data signal input/output. Not used in this unit (Opened)	
30	XALT	I/O	ATRAC I/F XALT signal input/output pin. Not used in this unit (Opened)	
31	ACK	I/O	ATRAC I/F ACK signal input/output pin. Not used in this unit (Opened)	
32	AC2	I/O	ATRAC I/F error data signal input/output pin. Not used in this unit (Opened)	
33	LCHST	I/O	ATRAC I/F Lch start data signal input/output pin. Not used in this unit (Opened)	
34	EXE	I/O	ATRAC I/F EXE signal input/output pin. Not used in this unit (Opened)	
35	MUTE	I/O	ATRAC I/F MUTE signal input/output pin. Not used in this unit (Opened)	
36	OSCO	О	Clock output (45 MHz)	
37	OSCI	I	Clock input (45 MHz)	
38	VSS	_	Ground pin	
39	ATT	I/O	ATRAC I/F ATT signal input/output pin. Not used in this unit (Opened)	
40	F86	О	ATRAC block 11.6 msec timing signal output pin. Not used in this unit (Opened)	
41	DOUT	О	Output of monitor/decode audio data signal to D/A converter (IC341)	
42	ADIN	I	Input of recording signal from A/D converter (IC301)	
43	ABCK	0	Output of bit clock signal to A/D and D/A converters (IC301, IC341)	
44	ALRCK	0	Output of L/R clock to A/D and D/A converters (IC301, IC341)	
45 to 47	SA2 to SA0	0	Address signal output. Not used in this unit (Opened)	
	1		6	

 $[\]ensuremath{^{*}}$ O/Z: In case of no output data, it becomes high impedance.

Pin No.	Pin Name	I/O	Function	
48, 49	A11, A10	О	Address signal output. Not used in this unit (Opened)	
50	VSS		Ground pin	
51	VDD		Power supply pin (+5V)	
52 to 55	A03 to A00	О	Output of address signal to RAM (IC272)	
56 to 60	A04 to A08	О		
61	XOE	О	Output of output enable control signal to RAM (IC272)	
62	XCAS	О	Output of column address strobe signal to RAM (IC272)	
63	VSS		Ground pin	
64	XCS	О	Output of chip select signal to RAM (IC272). Not used in this unit (Opened)	
65	A09	О	Output of address signal to RAM (IC272)	
66	XRAS	О	Output of row address strobe signal to RAM (IC272)	
67	XWE	О	Output of read/write control signal to RAM (IC272)	
68, 69	D1, D0	I/O	Input/output pin of data signal to/from RAM (IC272)	
70, 71	D2, D3	I/O		
72 to 74	D4 to D6	I/O	Data signal input/output pin. Not used in this unit (Opened)	
75	VSS		Ground pin	
76	D7	I/O	Data signal input/output pin. Not used in this unit (Opened)	
77	ERR	I/O	Input/output pin of error (C2PO) data to external RAM. Not used in this unit (Opened)	
78	EXTC2R	I	External RAM selection input for error data writing ("H": External RAM). (Fixed at "L")	
79	BUSY	О	RAM access BUSY signal output. Not used in this unit (Opened)	
00	EMD		EMPTY or immediately before FULL of ATRAC data (When DSC=ASC+1: "H").	
80	EMP	О	Not used in this unit (Opened)	
0.1	ETT		FULL or immediately before EMPTY of ATRAC data (When ASC=DSC+1: "H").	
81	FUL	0	Not used in this unit (Opened)	
82	EQL	О	ATRAC data EMPTY (When DSC=ASC: "H"). Not used in this unit	
02	MDLK	0	Indicates recording/playback data main/sub ("H": Sub, Linking: "L": Main). Not used in	
83	MDLK		this unit	
84	CPSY	О	Interpolation sync signal output. Not used in this unit	
85	CTMD0	О	DSC counter mode output. Not used in this unit	
86	CTMD1	О		
87	SPO	О	Output of system clock (512fs=22.5792 MHz) signal to CXD2535BR (IC121)	
88	VSS	_	Ground pin	
89	MDSY	О	Main data sync detection signal output. Not used in this unit	
90	LRCK	I	Input of L/R clock signal from CXD2535BR (IC121) (44.1 kHz)	
91	BCK	I	Input of bit clock signal from CXD2535BR (IC121) (2.8224 MHz)	
02	C2PO	т	Input of C2PO signal from CXD2535BR (IC121) (Shows data error status)	
92	C21 0	I	Playback:C2PO ("H"). Digital recording: D.In-Vflag. Analog recording: "L"	
02	DATA	1/0	Recording:Output of recording audio data signal to CXD2535BR (IC121)	
93	DATA	I/O	Playback:Input of playback audio data signal from CXD2535BR (IC121)	
94	DIDT	I	Input of digital audio input 16-bit data from CXD2535BR (IC121)	
95	DODT	О	Output of digital audio output 16-bit data to CXD2535BR (IC121)	
96	DIRCPB	О	Disc drive and EFM encoder/decoder recording/playback mode output. Not used in this unit	
97	MIN	I	Input of defect ON/OFF switching signal from CXD2535BR (IC121)	
98	SPOSL	I	Pin 87 (SPO) input/output switching input pin ("L":IN. "H":OUT). (Fixed at "H")	
99	MCK	О	RAM controller internal master clock output pin. Not used in this unit	
100	VSS		Ground pin	

• IC301 A/D Converter (CXD8566M)

Pin No.	Pin Name	I/O	Function
1	AINL+	I	Lch analog (+) input
2	AINL-	I	Lch analog (–) input
3	VREFIN	I	Reference voltage input (+3.2V)
4	AVDD	_	Modulator analog power supply (+5V)
5	AVss	_	Modulator analog Ground
6	ANAPD	I	Modulator power down. "H": Normal operation, "L": Power down. (Fixed at "H")
7	HPBYP	I	Test pin. (Fixed at "L")
8	MODE2	I	Mode setting. (Fixed at "L")
9	OSFL	О	Lch overflow flag output (Not used in this unit) (Opened)
10	DIGPD	I	Decimation filter power down.
10	DIGFD	1	"H": Normal operation, "L": Power down/reset
11	TEST	I	Test pin. (Fixed at "L")
12	CMODE	I	Master clock selection. "H": 384fs, "L": 256fs. (Fixed at "L")
13	SMODE	I	Mode setting. (Fixed at "L")
14	LRCK	I/O	Master mode: LRCK output, slave mode: LRCK input
15	BCK	I/O	Master mode: BCK output, slave mode: BCK input
16	DATA	О	DATA output
17	FSYNC	I/O	Master mode: FSYNC output, slave mode: FSYNC input
18	DVDD	_	Decimation filter power supply (+5V)
19	DVss	_	Decimation filter Ground
20	256FSI	I	Master clock input (256fs)
21	OSFR	О	Rch overflow flag output (Not used in this unit) (Opened)
22	MODE1	I	Mode setting. (Fixed at "L")
23	NC	_	Not used in this unit (Opened)
24	VLOGIC	_	Modulator logic power supply (+5V)
25	LGND	_	Modulator logic Grund
26	VREFO	О	Reference voltage output
27	AINR-	I	Rch analog (–) input
28	AINR+	I	Rch analog (+) input

• IC701 Display control, LED drive

Pin No.	Pin Name	I/O	Function
1 to 3	_		Not used in this unit (connected to ground)
4	AVss		Ground pin (A/D converter)
5, 6	_		Not used in this unit (connected to ground)
7	AVREF1		Reference voltage input to D/A converter (+5V)
8	RXD	I	UART data input from system controller (IC201)
9	TXD	О	UART data output to system controller (IC201)
10	CTS	I	UART data transmission request signal input from system controller (IC201)
11	RTS	О	UART data transmission request signal output to system controller (IC201)
12	SDATA	О	Serial data output to Fluorescent tube driver (IC702)
13	SCK	О	Serial clock output to Fluorescent tube driver (IC702)
14	CS	О	Chip select signal output to Fluorescent tube driver (IC702)
15	RST-OUT	О	Reset signal output to Fluorescent tube driver (IC702)
16 to 26	_		Not used in this unit (connected to ground)
27	LED1	I	Not used in this unit (Opened)
28 to 31	LED2 to LED5	I	LED drive "L": Active
32	_		Not used in this unit (connected to ground)
33	Vss		Ground pin
34 to 51	_		Not used in this unit (connected to ground)
52			Attenuate ON/OFF output
32		О	"L": -6 dB attenute
53 to 58	_		Not used in this unit (connected to ground)
59	P-OFF	О	Forced reset output to system controller (IC201)
60	RESET	I	Reset signal output "L": Active
61	BUS-IN	I	AU BUS signal input
62	BUS-OUT	О	AU BUS signal output
63, 64	EN-IN	I	Encoder input
65 to 67	GND		Ground pin
68	VDD		Power supply pin (+5V)
69	X2	I	M-:11- (5 MH-)
70	X1	О	Main clock (5 MHz)
71	GND		Ground pin
72	_	_	Not used in this unit (Opened)
73	GND		Ground pin
74	AVDD		Power supply pin (+5V) (A/D converter)
75	AVREF0		Reference voltage input to A/D converter (+5V)
76 to 78	KEY1 to KEY3	I	Key input
79, 80	_		Not used in this unit (connected to ground)

SECTION 6 EXPLODED VIEWS

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

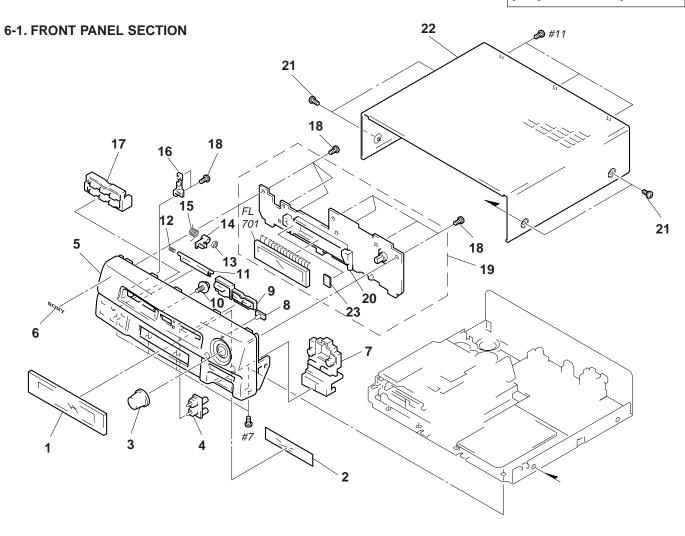
• Abbreviation

CND: Canadian model
HK : Hong Kong model
SP : Singapore model.
JE : Tourist model

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

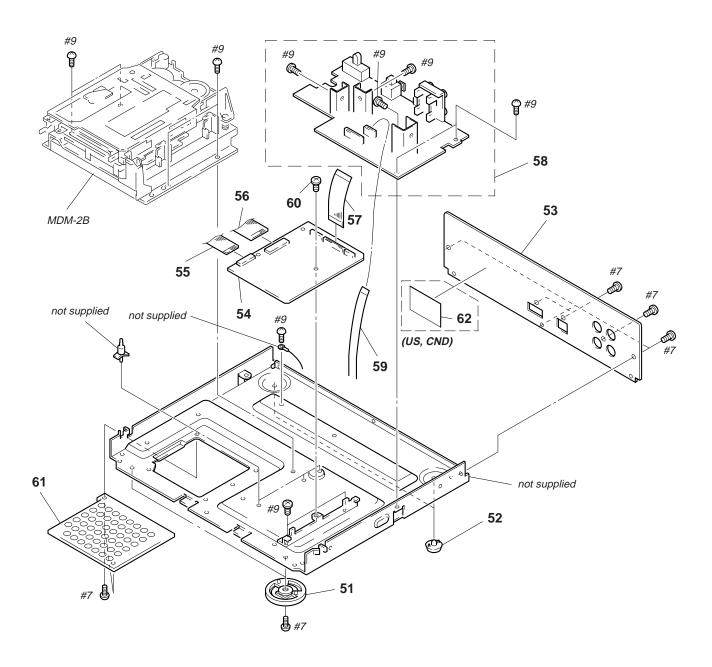
Replace only with part number specified.

Les composants identifiés par une marque \(\Delta \) sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.



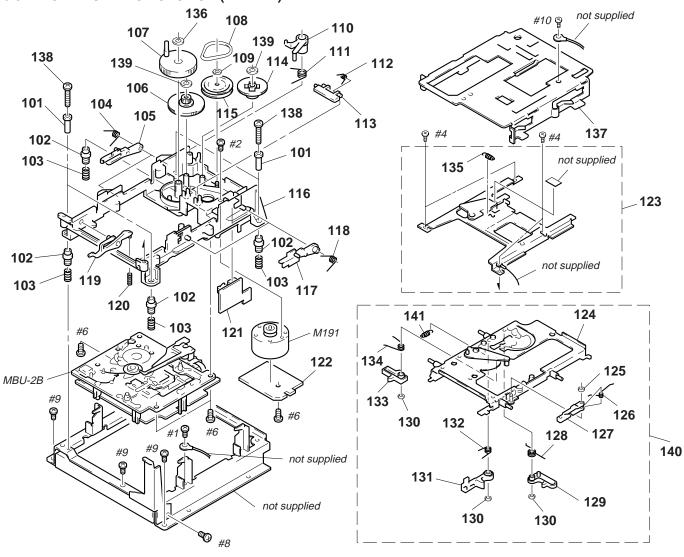
Ref. No.	Part No.	Description	<u>Remark</u>	Ref. No.	Part No.	Description	Remark
1	4-977-668-01	WINDOW (FL)		14	4-969-213-01	LEVER (LID)	
2	4-979-353-01	FILTER (MD)		15	4-972-652-01	SPRING, TORSION	
3	4-977-680-01	KNOB (JOG)					
4	4-977-677-01	INDICATOR (DIGITAL)		16	X-4945-295-1	BRACKET (LEVER) ASSY	
5	4-977-667-01	PANEL, FRONT		17	4-977-671-01	BUTTON (MODE)	
				18	4-951-620-01	SCREW (2.6X8), +BVTP	
6	4-962-708-01	EMBLEM (4-A), SONY		* 19	A-4699-001-A	PANEL BOARD, COMPLETE (SP,HK,JE)
7	X-4946-465-1	BUTTON (PLAY) ASSY		* 19	A-4699-005-A	PANEL BOARD, COMPLETE (US,CND)	
8	4-977-676-01	INDICATOR (JOG)					
9	4-977-672-01	BUTTON (EJECT)		* 20	4-977-695-01	HOLDER (FL)	
10	4-933-134-01	SCREW (+PTPWH M2.6X6)		21	3-363-099-01	SCREW (CASE 3 TP2)	
				* 22	4-970-927-61	CASE	
11	4-977-669-01	LID (CARTRIDGE)		* 23	4-955-901-01	CUSHION (FL)	
12	4-978-356-01	SPRING (LID), TORSION		FL701	1-517-461-11	INDICATOR TUBE, FLUORESCENT	
13	3-681-678-00	WASHER, SLIT					

6-2. CHASSIS SECTION



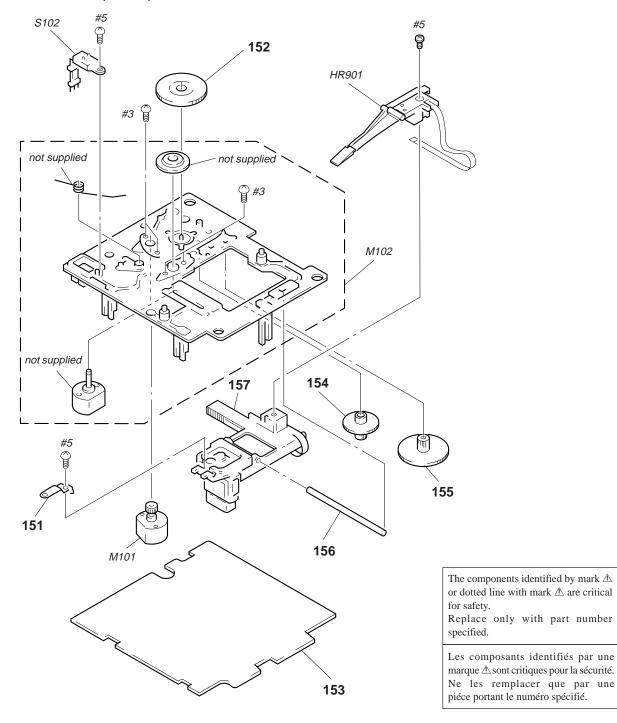
Ref. No.	Part No.	<u>Description</u>	Remark	Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>
51	4-977-699-11	LEG (F)		57	1-776-168-11	WIRE (FLAT TYPE) (21 CORE)	
52	4-965-822-01	FOOT		* 58	A-4699-000-A	POWER BOARD, COMPLETE (SP,HK,J	E)
* 53	4-977-679-21	PANEL, BACK (SP,HK,JE)					
* 53	4-977-679-31	PANEL, BACK (US,CND)		* 58	A-4699-004-A	POWER BOARD, COMPLETE (US,CND))
* 54	A-4699-002-A	DIGITAL BOARD, COMPLETE (SP,HK,J	JE)	59	1-775-925-11	WIRE (FLAT TYPE) (10 CORE)	
				60	4-962-641-01	SCREW (+PSWTT 3X8)	
* 54	A-4699-006-A	DIGITAL BOARD, COMPLETE (US,CNE	0)	61	4-969-237-01	LID (CHASSIS)	
55	1-776-417-11	WIRE (FLAT TYPE) (18 CORE)		62	3-703-044-26	LABEL, CAUTION (US,CND)	
56	1-776-416-11	WIRE (FLAT TYPE) (30 CORE)					

6-3. MECHANISM DECK SECTION (MDM-2B)



Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>
101	4-983-100-01	COLLAR (DAMPER)		* 122	1-653-412-11	MOTOR BOARD	
102	4-967-671-01	INSULATOR (MD)		123	A-4660-647-I	BRACKET (LVO) ASSY	
103	4-967-673-01	SPRING, COMPRESSION		124	X-4946-378-1	HOLDER ASSY	
104	4-967-668-01	SPRING (UDL), TORSION		125	4-968-919-11	WASHER, STOPPER	
105	4-967-667-01	LEVER (UDL)					
				126	4-967-646-01	SPRING (SHT), TORSION	
106	4-967-655-01	GEAR (BD-B)		127	4-967-645-01	LEVER (SHT)	
107	X-4945-069-1	CAM ASSY		128	4-977-450-01	SPRING (LM), TORSION	
108	4-967-656-01	BELT (BD)		129	4-967-639-01	LEVER (LM)	
109	4-968-919-31	WASHER, STOPPER		130	4-968-919-01	WASHER, STOPPER	
110	4-967-637-01	LEVER (SLM)					
				131	4-967-641-01	LEVER (L)	
111	4-967-638-01	SPRING (SLM), TORSION		132	4-967-642-01	SPRING (L), TORSION	
112	4-968-273-01	SPRING (OWH), TORSION		133	4-967-643-01	LEVER (LS)	
113	4-968-272-01	LEVER (OWH)		134	4-967-644-01	SPRING (LS), TORSION	
114	4-967-654-01	GEAR (BD-A)		135	4-967-664-01	SPRING, TENSION	
115	4-957-794-01	PULLEY (GEAR 1)					
				136	4-968-919-21	WASHER, STOPPER	
* 116	X-4945-068-1	BASE (BD) ASSY		* 137	X-4945-872-1	SLIDER (M) ASSY	
117	4-967-669-01	LEVER (UDR)		138	4-972-910-01	SCREW (2.6X18), +B	
118	4-967-670-01	,,		139	4-968-919-41	WASHER, STOPPER	
119	4-967-657-01	LEVER (DOOR)		140	A-4660-953-B	HOLDER COMPLETE ASSY BOARD, C	OMPLETE
120	4-970-710-01	SPRING, COMPRESSION					
				141		SPRING, TENSION	
* 121	1-653-411-11	DETECTION SW BOARD		M191	A-4660-646-A	MOTOR ASSY (LOADING)	

6-4. BASE UNIT SECTION (MBU-2)



Ref. No.	Part No.	<u>Description</u>	Remark	Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>
151	4-967-679-01	SPRING (OP), LEAF		156	4-967-678-01	SHAFT (OP)	
152	4-967-675-01	GEAR (SL-A)		157 1	8-583-009-11	OPTICAL PICK-UP KMS-210A/J-N	
* 153	A-4673-174-A	BD BOARD, COMPLETE		HR901	1-500-304-21	HEAD, OVER LIGHT (RF322-74A)	
154	4-967-676-01	GEAR (SL-B)		M101	A-4660-651-A	MOTOR ASSY (SLED)	
155	4-967-677-01	GEAR (SL-C)		M102	A-4660-650-A	CHASSIS ASSY, BU (SPINDLE)	
				S102	1-762-148-11	SWITCH, PUSH (2 KEY) (REFLECT/PR	OTECT)



SECTION 7 ELECTRICAL PARTS LIST

Note:

The components identified by mark \triangle or dotted line with mark △ are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque A sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board

- · Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS All resistors are in ohms

METAL: Metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F: nonflammable

• SEMICONDUCTORS

In each case, u: μ , for example:

 $uA...: \mu A..., uPA...: \mu PA..., uPB...: \mu PB...,$

 $uPC...: \mu\,PC...,\,uPD...:\,\mu\,PD...$

- CAPACITORS
 - $uF : \mu F$
- COILS $uH: \mu H$
- Abbreviation

CND: Canadian model HK : Hong Kong model : Singapore model : Tourist model JΕ

* NOTE

For replacement of IC121 and IC171 on the BD board, refer to the service note on page 5.

Ref. No.	Part No.	Description			<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>
*	A-4673-174-A	BD BOARD, COMP	LETE			C152	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		******	****			C155	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V
		< CAPACITOR >				C160	1-104-601-11		10uF	20%	10V
						C161	1-104-601-11		10uF	20%	10V
C101	1-104-913-11		10uF	20%	16V	C163		CERAMIC CHIP	0.01uF		50V
C102		CERAMIC CHIP	0.1uF		25V	C164		CERAMIC CHIP	0.01uF		50V
C103	1-104-913-11		10uF	20%	16V	C166	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C104		TANTAL. CHIP	10uF	20%	16V						
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C167		CERAMIC CHIP	0.1uF		25V
						C169		TANTAL. CHIP	10uF	20%	16V
C106		CERAMIC CHIP	0.001uF	5%	50V	C170		TANTAL. CHIP	10uF	20%	16V
C107		CERAMIC CHIP	0.01uF		50V	C171		CERAMIC CHIP	0.1uF		25V
C108		CERAMIC CHIP	0.01uF		50V	C175	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C109		CERAMIC CHIP	0.022uF	10%	25V						
C111	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C176	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
						C177		CERAMIC CHIP	10PF	0.5PF	50V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C178	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	C181	1-104-913-11		10uF	20%	16V
C114	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C182	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-107-682-11	CERAMIC CHIP	1uF	10%	16V						
C116	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	C183	1-163-038-91	CERAMIC CHIP	0.1uF		25V
						C184	1-107-836-11	ELECT CHIP	22uF	20%	V8
C117	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C185	1-164-611-11	CERAMIC CHIP	0.001uF	10%	500V
C119	1-104-913-11	TANTAL. CHIP	10uF	20%	16V	C186	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C121	1-126-395-11	ELECT	22uF	20%	16V	C191	1-126-395-11	ELECT	22uF	20%	16V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V						
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C192	1-163-038-91	CERAMIC CHIP	0.1uF		25V
						C193	1-164-346-11	CERAMIC CHIP	1uF		16V
C124	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C194	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C125	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V						
C126	1-107-682-11	CERAMIC CHIP	1uF	10%	16V			< CONNECTOR >			
C127	1-163-038-91	CERAMIC CHIP	0.1uF		25V						
C128	1-164-232-11	CERAMIC CHIP	0.01uF		50V	CN101	1-766-508-11	CONNECTOR, FFC	/FPC (ZIF) 22	2P	
						CN102	1-766-510-21	CONNECTOR, FFC	FPC 30P		
C129	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	CN103	1-766-509-21	CONNECTOR, FFC	FPC 18P		
C130	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	CN104	1-766-898-21	HOUSING, CONNE	CTOR(PC BC	DARD)4P	
C131	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V						
C132	1-107-682-11	CERAMIC CHIP	1uF	10%	16V			< DIODE >			
C133	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V						
						D101	8-719-988-62	DIODE 1SS355			
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D155	8-719-031-17	DIODE 1SS322-T	E85L		
C135	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D161	8-719-421-15	DIODE MA8027-I	_		
C136	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	D181	8-719-033-60	DIODE F1P2STP			
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D183	8-719-033-60	DIODE F1P2STP			
C142	1-163-251-11	CERAMIC CHIP	100PF	5%	50V						
								< IC >			
C143	1-163-251-11	CERAMIC CHIP	100PF	5%	50V						
C144	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	IC101	8-752-072-68	IC CXA1981AR			
C151	1-104-913-11	TANTAL. CHIP	10uF	20%	16V	IC102	8-759-243-19	IC TC7SU04F			



			_							
Ref. No.	Part No.	<u>Description</u>	<u>F</u>	Remark	Ref. No.	Part No.	Description			Remark
IC121		IC CXD2535AR *NOTE			R116	1-216-069-00		6.8K	5%	1/10W
IC121		IC CXD2535BR * NOTE			R117	1-216-113-00		470K	5%	1/10W
IC122	8-759-243-19	IC TC7SU04F			R120		METAL GLAZE	100	5%	1/10W
10454	0.750.470.40	10 1400474001/1451			R121		METAL GLAZE	100K	5%	1/10W
IC151		IC MPC17A38VMEL			R122	1-216-295-91	CONDUCTOR, CH	IIP (2012)		
IC171		IC X24C01S * NOTE			D122	1 21/ 027 00	METAL CLUD	220	5%	1/10\\\
IC172 IC181		IC uPC842G2 IC TC74ACT540FS			R123 R124	1-216-037-00	METAL CHIP	330 100	5% 5%	1/10W 1/10W
IC181		IC TC74AC1540F3			R124 R125		METAL GLAZE	100	5%	1/10W
10102	0-737-243-17	10 10/30041			R128	1-216-053-00		1.5K	5%	1/10W
IC191	8-759-822-99	IC L88MS05T-FA			R129	1-216-037-00		330	5%	1/10W
										.,
		< COIL >			R130	1-216-041-00	METAL CHIP	470	5%	1/10W
					R131	1-216-073-00	METAL CHIP	10K	5%	1/10W
L101	1-414-234-11	INDUCTOR, FERRITE BEAD			R132	1-216-097-91	METAL GLAZE	100K	5%	1/10W
L102		INDUCTOR, FERRITE BEAD			R133	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
L103		INDUCTOR, FERRITE BEAD			R134	1-216-037-00	METAL CHIP	330	5%	1/10W
L105		INDUCTOR, FERRITE BEAD								
L106	1-414-234-11	INDUCTOR, FERRITE BEAD			R135	1-216-053-00		1.5K	5%	1/10W
					R136	1-216-041-00		470	5%	1/10W
L121		INDUCTOR, FERRITE BEAD			R137		METAL GLAZE	100	5%	1/10W
L122		INDUCTOR CHIP 100uH			R139		METAL GLAZE	47	5%	1/10W
L151 L152	1-412-622-51 1-412-622-51				R140	1-216-017-91	METAL GLAZE	47	5%	1/10W
L152 L153		INDUCTOR CHIP 100uH			R141	1 216 205 01	CONDUCTOR, CH	IID (2012)		
LIJJ	1-412-037-31	INDUCTOR CITIE TOOUT			R142	1-216-073-00		10K	5%	1/10W
L154	1-412-039-51	INDUCTOR CHIP 100uH			R143	1-216-073-00		10K	5%	1/10W
L155		INDUCTOR CHIP 1mH			R144		METAL GLAZE	100	5%	1/10W
L161		INDUCTOR, FERRITE BEAD			R145		METAL GLAZE	1M	5%	1/10W
L162		INDUCTOR, FERRITE BEAD								
L195	1-233-316-21	FILTER, CHIP EMI			R146	1-216-037-00	METAL CHIP	330	5%	1/10W
					R147		METAL GLAZE	100	5%	1/10W
		< MOTOR >			R148	1-216-045-00		680	5%	1/10W
					R150		CONDUCTOR, CH			
M101		MOTOR ASSY (SLED)			R151	1-216-097-91	METAL GLAZE	100K	5%	1/10W
M102	A-4660-650-A	CHASSIS ASSY, BU (SPINDLI	E)		5454				=0.	
		TRANSICTOR			R154		METAL GLAZE	680	5%	1/4W
		< TRANSISTOR >			R155		METAL GLAZE	680	5%	1/4W
Q101	0 720 00E 12	TRANSISTOR DTA144EU			R158 R161	1-216-121-91	METAL GLAZE	1M 2.2K	5% 5%	1/10W 1/10W
Q151		TRANSISTOR DTC144EU			R162	1-216-057-00		2.2K 2.2K	5%	1/10W
Q162		TRANSISTOR 2SB798-DL			102	1-210-037-00	WILIAL CITI	2.21	370	17 10 00
Q163		TRANSISTOR DTA144EU			R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
Q164		TRANSISTOR DTA123JU			R164	1-216-045-00		680	5%	1/10W
					R165		METAL GLAZE	100K	5%	1/10W
Q181	8-729-018-75	TRANSISTOR 2SJ278MY			R166	1-220-250-11	METAL GLAZE	10	5%	1/2W
Q182	8-729-017-65	TRANSISTOR 2SK1764KY			R167	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
		< RESISTOR >			R169	1-219-724-11		1	1%	1/4W
					R170	1-216-073-00		10K	5%	1/10W
R101	1-216-077-00		5%	1/10W	R171	1-216-073-00		10K	5%	1/10W
R102		METAL CHIP 10K	5%	1/10W	R172	1-216-065-00		4.7K	5%	1/10W
R103	1-216-073-00		5%	1/10W	R174	1-216-065-00	IVIETAL CHIP	4.7K	5%	1/10W
R104 R105		METAL GLAZE 1K METAL CHIP 4.7K	5% 5%	1/10W 1/10W	D174	1-216-065-00	METAL CHID	1 7V	F0/	1/10W
CULN	1-216-065-00	IVILIAL CHIF 4./N	J /0	1/1044	R176 R178	1-216-065-00		4.7K 4.7K	5% 5%	1/10W
R106	1-216-133-00	METAL CHIP 3.3M	5%	1/10W	R176	1-216-003-00		4.7K 10K	5%	1/10W
R107			5%	1/10W	R182	1-216-073-00	METAL GLAZE	47K	5%	1/10W
R110	1-216-077-00		5%	1/10W	R183		METAL GLAZE	47K	5%	1/10W
R113	1-216-061-00		5%	1/10W		55, 71	0222		- 70	
R114		METAL GLAZE 100	5%	1/10W	R186	1-216-134-00	METAL CHIP	2.2	5%	1/8W
					R187	1-216-134-00		2.2	5%	1/8W

BD DETECTION SW DIGITAL

Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>	Ref. No.	Part No.	Description			<u>Remark</u>
		< VARIABLE RES	STOR >			C304	1-126-204-11		47uF	20%	16V
RV101	1-241-396-11	RES, ADJ, METAL	GLAZE 22K			C305	1-163-038-91	CERAMIC CHIP	0.1uF		25V
RV102		RES, ADJ, METAL				C306		CERAMIC CHIP	0.1uF		25V
		0.4.0.				C307		CERAMIC CHIP	15PF	5%	50V
		< SWITCH >				C308 C309	1-163-097-00 1-126-395-11	CERAMIC CHIP	15PF 22uF	5% 20%	50V 16V
S101	1-572-467-41	SWITCH, PUSH (1 KEY) (LIMI	IT)		C309	1-126-395-11		22uF	20%	16V
S102		SWITCH, PUSH (2			OTECT)						
ate at a teate at a dead of a		******			to the standards at a to a to a to	C311		CERAMIC CHIP	220PF	10%	50V
ste ste ste ste ste ste ste ste ste s		te ape ape ape ape ape ape ape ape ape ap	e ale ale ale ale ale ale ale ale ale al	ale ale ale ale ale ale ale a	te ate ate ate ate ate ate ate ate	C312 C313		CERAMIC CHIP CERAMIC CHIP	220PF 0.1uF	10%	50V 25V
*	1-653-411-11	DETECTION SW E	BOARD			C314	1-126-204-11		47uF	20%	16V
		******	****			C315	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
		< CONNECTOR >				C316	1 162 017 00	CERAMIC CHIP	0.0047uF	5%	50V
		< CONNECTOR >				C310		CERAMIC CHIP	0.0047ui 0.0047uF	5%	50V 50V
CN193	1-770-010-21	CONNECTOR, BO.	ARD TO BOA	ARD 4P		C318		CERAMIC CHIP	0.0047uF	5%	50V
						C319	1-126-204-11	ELECT CHIP	47uF	20%	16V
		< SWITCH >				C320	1-163-038-91	CERAMIC CHIP	0.1uF		25V
S191	1-762-149-11	SWITCH, PUSH (1 KFY) (I OA	D OUT DI	T)	C321	1-126-204-11	FLECT CHIP	47uF	20%	16V
S192		SWITCH, PUSH (C322		CERAMIC CHIP	0.1uF	2070	25V
S193	1-762-149-11	SWITCH, PUSH (1 KEY) (CHU	CKING IN	DET)	C323	1-163-038-91	CERAMIC CHIP	0.1uF		25V
						C326	1-163-038-91	CERAMIC CHIP	0.1uF		25V
******	******	******	*******	******	******	C327	1-126-204-11	ELECT CHIP	47uF	20%	16V
*	A-4699-002-A	DIGITAL BOARD,	COMPLETE	(HK.SP.II	=)	C331	1-163-038-91	CERAMIC CHIP	0.1uF		25V
	7. 1077 002 7.	*******			,	C333		CERAMIC CHIP	0.1uF		25V
						C334	1-163-038-91	CERAMIC CHIP	0.1uF		25V
*	A-4699-006-A	DIGITAL BOARD,	COMPLETE	(US,CND)	C341	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		*****	******	******	:	C342	1-126-204-11	ELECT CHIP	47uF	20%	16V
		< CAPACITOR >				C343	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				C344	1-126-204-11		47uF	20%	16V
C202	1-163-025-11	CERAMIC CHIP	0.001uF		50V	C348		CONDUCTOR, CHI	P (2012) (HI	(,SP,JE)	
C203	1-163-025-11	CERAMIC CHIP	0.001uF		50V	C348	1-414-551-11	MICRO INDUCTOR	R (CHIP) (ÙS	,CND)	
C204	1-163-025-11	CERAMIC CHIP	0.001uF		50V	C351	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C206		CERAMIC CHIP	0.1uF		25V						
C207	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C352	1-126-204-11		47uF	20%	16V
C200	1 1/2 117 00	CEDAMIC CLUD	100DF	E0/	EOV/	C353		CERAMIC CHIP	0.1uF	200/	25V
C209 C212		CERAMIC CHIP CERAMIC CHIP	100PF 0.1uF	5%	50V 25V	C354 C355	1-126-204-11	CERAMIC CHIP	47uF 0.1uF	20%	16V 25V
C212	1-103-036-91		22uF	20%	16V	C356	1-103-036-91		47uF	20%	16V
C213		METAL GLAZE	100K	5%	1/10W	0330	1-120-204-11	LLLOT CITII	47ui	2070	100
C216		CERAMIC CHIP	100PF	5%	50V	C357	1-163-038-91	CERAMIC CHIP	0.1uF		25V
						C361	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C274		CERAMIC CHIP	0.01uF		50V	C362		CERAMIC CHIP	68PF	5%	50V
C275		CERAMIC CHIP	8PF		50V	C363		CERAMIC CHIP	33PF	5%	50V
C276		CERAMIC CHIP	8PF		50V	C364	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C277 C280	1-216-295-91	CONDUCTOR, CH	1P (2012) 47uF	20%	14\/	C24E	1 142 220 11	CERAMIC CHIP	33PF	5%	50V
C20U	1-120-204-11	ELECT CHIP	4/UF	20%	16V	C365 C366		CERAMIC CHIP	33PF	5%	50V 50V
C281	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C367		CERAMIC CHIP	0.1uF	J /0	25V
C282		CERAMIC CHIP	0.1uF		25V 25V	C368		CERAMIC CHIP	0.1uF		25V 25V
C285	1-126-204-11		47uF	20%	16V	C411		CERAMIC CHIP	0.1uF	10%	25V
C286		CERAMIC CHIP	0.1uF		25V						-
C288		CERAMIC CHIP	0.1uF		25V	C412	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
						C413	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C301	1-126-395-11		22uF	20%	16V	C414		CERAMIC CHIP	0.001uF		50V
C302	1-126-395-11		22uF	20%	16V	C415		CERAMIC CHIP	68PF	5%	50V
C303	1-126-204-11	ELECT CHIP	47uF	20%	16V	C416	1-163-038-91	CERAMIC CHIP	0.1uF		25V
											(HK,SP,JE)

DIGITAL

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
· ·		•	4.5					•			Kemark
C416	1-164-346-11	CERAMIC CHIP	1uF		16V (US,CND)	IC301 IC302		IC CXD8566M IC CXA8054M			
C417	1-163-038-91	CERAMIC CHIP	0.1uF		25V						
C418		CERAMIC CHIP	0.1uF		25V	IC341		IC CXD8567AM			
C419		CERAMIC CHIP	0.1uF		25V	IC342		IC M5218AFP			
C420	1-126-204-11	ELECT CHIP	47uF	20%	16V	IC411		IC TC9246F-TP1			
						IC412		IC TC7WU04F			
C421	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	IC431	8-759-040-83	IC BA6287F			
0.400		00110110700 0111	D (0040) (III	05 15)	(US,CND)						
C423		CONDUCTOR, CHI						< COIL >			
C423		MICRO INDUCTOR		s,CND)	251/	1.001	1 01/ 005 01	COMPLICTOR CITI	D (2012) (II	ווע כים וב/	
C431 C471		CERAMIC CHIP CERAMIC CHIP	0.1uF 0.1uF		25V 25V	L221 L221	1-216-295-91 1-414-551-11	·			
C471	1-103-030-91	CERAIVIIC CHIF	U. Tul		237	L302	1-216-295-91				
C472	1 163 030 01	CERAMIC CHIP	0.1uF		25V	L302	1-414-551-11				
C472		CONDUCTOR, CHI			23 V	L341		CONDUCTOR, CHI	` ' '	. ,	
C474		CERAMIC CHIP	0.1uF		25V	2541	1 210 270 71	CONDOCTOR, OTH	1 (2012) (11	II(,51 ,5L)	
C476		CERAMIC CHIP	0.022uF	10%	25V	L341	1-414-551-11	MICRO INDUCTOR	R (CHIP) (US	S.CND)	
C477		CERAMIC CHIP	0.1uF	.070	25V	L344	1-216-295-91				
						L344	1-414-551-11				
C999	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	L411	1-412-332-41	INDUCTOR	2.2uH	,	
						L412	1-216-295-91	CONDUCTOR, CHI	P (2012) (H	IK,SP,JE)	
		< CONNECTOR >								-	
						L412	1-414-551-11	MICRO INDUCTOR	R (CHIP) (US	S,CND)	
CN202		CONNECTOR, FFC									
CN203		PIN, CONNECTOR) 5P				< RESISTOR >			
CN221		CONNECTOR, FFC				5000			4001/	=0.4	4/4014/
CN223		CONNECTOR, FFC				R203		METAL GLAZE	100K	5%	1/10W
* CN251	1-770-154-11	PIN, CONNECTOR	(PC BOARD) 6P		R204		METAL GLAZE	100K	5%	1/10W
* CN1001	1 770 152 11	DINI CONNECTOD	(DC DOADD	\ 0D		R205		METAL GLUD	100K	5%	1/10W
* CN281	1-770-153-11	PIN, CONNECTOR	(PC BUARD) 8P		R206 R207	1-216-073-00 1-216-073-00		10K 10K	5% 5%	1/10W 1/10W
		< DIODE >				K207	1-210-073-00	WILIAL CHIF	IUK	370	1/1000
		(DIODE >				R208	1-216-073-00	METAL CHIP	10K	5%	1/10W
D301	8-719-914-42	DIODE DA204K				R209		METAL GLAZE	100K	5%	1/10W
D302		DIODE DA204K				R211	1-216-073-00		10K	5%	1/10W
D303		DIODE F01J4L				R212		METAL GLAZE	100	5%	1/10W
D341	8-719-056-15	DIODE F01J4L				R213	1-216-097-91	METAL GLAZE	100K	5%	1/10W
D411	8-719-974-98	DIODE HVM17-0	1								
						R214	1-216-049-91	METAL GLAZE	1K	5%	1/10W
		< FERRITE BEAD >	>			R215	1-216-097-91	METAL GLAZE	100K	5%	1/10W
						R216	1-216-073-00		10K	5%	1/10W
		CONDUCTOR, CHI				R217		METAL GLAZE	100K	5%	1/10W
FB272		CONDUCTOR, CHI	. , .			R218	1-216-097-91	METAL GLAZE	100K	5%	1/10W
FB272		MICRO INDUCTOR		s,CND)		D010	1 01/ 007 01	METAL OLAZE	1001/	F0/	1/10/1/
FB273		CONDUCTOR, CHI				R219		METAL GLAZE	100K	5%	1/10W
FB274	1-216-295-91	CONDUCTOR, CHI	P (2012)			R220		METAL GLAZE METAL GLAZE	100K	5%	1/10W
FB341	1 216 205 01	CONDUCTOR, CHI	D (2012) (LI	N CD IE)		R221 R222	1-216-097-91		100K 10K	5% 5%	1/10W 1/10W
FB341		MICRO INDUCTOR				R223		METAL GLAZE	100K	5%	1/10W
FB411		CONDUCTOR, CHI				11223	1-210-077-71	WILTAL GLAZE	TOOK	370	1/1000
FB411		MICRO INDUCTOR				R224	1-216-097-91	METAL GLAZE	100K	5%	1/10W
FB412		CONDUCTOR, CHI				R225		METAL GLAZE	100K	5%	1/10W
10112	. 2.0 2/0 /1	20.12001011, 0111	. (-012) (11	, 51 , 5 L)		R226		METAL GLAZE	100K	5%	1/10W
FB412	1-414-551-11	MICRO INDUCTOR	R (CHIP) (US	S,CND)		R228		METAL GLAZE	100K	5%	1/10W
FB471		CONDUCTOR, CHI		,		R229		METAL GLAZE	1K	5%	1/10W
			•								
		< IC >				R230		METAL GLAZE	1K	5%	1/10W
						R231	1-216-073-00		10K	5%	1/10W
IC201		IC M37610MD-0				R232		METAL GLAZE	100K	5%	1/10W
IC222		IC MSM514400C	:-/0SJ			R233		METAL GLAZE	100K	5%	1/10W
IC271	8-752-371-17	IC CXD2536R				R234	1-216-073-00	IVIETAL CHIP	10K	5%	1/10W

DIGITAL MOTOR PANEL

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
		•	1001/	F0/				•	221/		
R235	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R361	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R236	1-216-097-91		100K	5%	1/10W	R362	1-216-687-11		33K	0.5%	1/10W
R238	1-216-097-91		100K	5%	1/10W	R363		METAL CHIP	22K	0.50%	1/10W
R239	1-216-097-91		100K	5%	1/10W	R364	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R240	1-216-097-91	METAL GLAZE	100K	5%	1/10W	ם אור	1 01/ /07 11	METAL CLUD	221/	0.50/	1/10/4/
D241	1 01/ 070 00	METAL CLUD	101/	F0/	1/10///	R365		METAL CHIP	33K	0.5%	1/10W
R241	1-216-073-00	METAL CHIP	10K	5%	1/10W	R366	1-216-687-11		33K	0.5%	1/10W
R242	1-216-073-00		10K	5%	1/10W	R367	1-208-814-11		22K	0.50%	1/10W
R243	1-216-097-91		100K	5%	1/10W	R368	1-208-814-11		22K	0.50%	1/10W
R244	1-216-073-00		10K	5%	1/10W	R369	1-216-695-11	METAL CHIP	68K	0.5%	1/10W
R245	1-216-049-91	METAL GLAZE	1K	5%	1/10W	D070	4.047.705.44	METAL OLUB	(0)(0.50/	4.40144
D04/	1 21/ 0/5 00	METAL OLUD	4.71/	F0/	1/10/1/	R370		METAL CHIP	68K	0.5%	1/10W
R246	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R371	1-216-695-11		68K	0.5%	1/10W
R247	1-216-073-00		10K	5%	1/10W	R372	1-216-695-11		68K	0.5%	1/10W
R248	1-216-073-00		10K	5%	1/10W	R401		CERAMIC CHIP	2200PF	10%	50V
R249	1-216-073-00		10K	5%	1/10W	R402	1-216-295-91	CONDUCTOR, CHI	P (2012) (HK	(,SP,JE)	
R250	1-216-073-00	METAL CHIP	10K	5%	1/10W						
						R402		MICRO INDUCTOR			
R251	1-216-073-00		10K	5%	1/10W	R411	1-208-810-11		15K	0.50%	1/10W
R252	1-216-073-00		10K	5%	1/10W	R412	1-208-810-11		15K	0.50%	1/10W
R253		CERAMIC CHIP	0.0047uF	5%	50V	R413	1-208-810-11		15K	0.50%	1/10W
R254		CERAMIC CHIP	0.0047uF	5%	50V	R414	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R255	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V						
						R415		METAL GLAZE	1K	5%	1/10W
R256	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	R416	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R257	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R417	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R259	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R418	1-216-025-91	METAL GLAZE	100	5%	1/10W
R260	1-216-295-91	CONDUCTOR, CHI	² (2012)								(HK,SP,JE)
R271	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R418	1-216-037-00	METAL CHIP	330	5%	1/10W
											(US,CND)
R272	1-216-097-91	METAL GLAZE	100K	5%	1/10W						
R273	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R431	1-216-021-00	METAL CHIP	68	5%	1/10W
R274	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R432	1-216-021-00	METAL CHIP	68	5%	1/10W
R275	1-216-097-91	METAL GLAZE	100K	5%	1/10W	R461	1-216-073-00	METAL CHIP	10K	5%	1/10W
R276	1-216-295-91	CONDUCTOR, CHIE	P (2012) (H	(,SP,JE)		R463	1-216-049-91	METAL GLAZE	1K	5%	1/10W
						R471	1-216-295-91	CONDUCTOR, CHI	P (2012)		
R276	1-216-037-00	METAL CHIP	330	5%	1/10W						
					(US,CND)	R601	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R277	1-216-033-00	METAL CHIP	220	5%	1/10W	R602	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R278	1-216-033-00	METAL CHIP	220	5%	1/10W	R603	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R279	1-216-295-91	CONDUCTOR, CHI	P (2012)			R604	1-216-073-00	METAL CHIP	10K	5%	1/10W
R280	1-216-295-91	CONDUCTOR, CHI	2012)			R605	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R281	1-216-025-91	METAL GLAZE	100	5%	1/10W	R606	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R282	1-216-025-91	METAL GLAZE	100	5%	1/10W	R607	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R283	1-216-033-00	METAL CHIP	220	5%	1/10W	R608	1-216-073-00	METAL CHIP	10K	5%	1/10W
R284	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	R609	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R301	1-216-081-00	METAL CHIP	22K	5%	1/10W	R610	1-543-948-11	BEAD, FERRITE (C	HIP)		
								•	,		
R302	1-216-081-00	METAL CHIP	22K	5%	1/10W	R611	1-216-295-91	CONDUCTOR, CHI	P (2012)		
R303	1-216-093-00		68K	5%	1/10W			, ,	(- /		
R304	1-216-093-00	METAL CHIP	68K	5%	1/10W			< VIBRATOR >			
R305		METAL GLAZE	47	5%	1/10W						
R306		METAL GLAZE	47	5%	1/10W	X201	1-760-493-11	VIBRATOR, CERAN	AIC (CHIP T)	/PE)(8MI	Hz)
	, ,				••	X203		VIBRATOR, CRYST	•	, ,	7
R307	1-216-017-91	METAL GLAZE	47	5%	1/10W			,	, /		
R308	1-216-033-00		220	5%	1/10W	******	******	*********	******	*****	******
R310		CONDUCTOR, CHI		0 / 0	17 10 44						
R316		CONDUCTOR, CHI	. ,								
R341		METAL GLAZE	100	5%	1/10W						
11,341	1-210-025-71	IVIL IAL OLAZL	100	J /U	17 10 00						
R343	1-216-205 01	CONDUCTOR, CHI	D (2012)								
11373	1 210 2/0-71	SONDO FOR, OHII	(2012)								



Ref. No.	Part No.	Description			Remark	l Dof No	Part No.	Description			Domark	
		<u>Description</u>			Kemark	Ref. No.		<u>Description</u>	10005	400/	Remark	
*	1-653-412-11	MOTOR BOARD *******				C743 C744	1-162-282-31 1-162-282-31		100PF 100PF	10% 10%	50V 50V	
		< CAPACITOR >				C745	1-162-282-31		100PF	10%	50V	
		CALACITOR >				C745	1-162-282-31		100FF	10%	50V	
C199	1-164-159-11	CERAMIC	0.1uF		50V	C747	1-162-282-31		100PF	10%	50V	
						C748	1-162-282-31		100PF	10%	50V	
		< CONNECTOR >				C750	1-164-159-11	CERAMIC	0.1uF		50V	
* CN191	1-568-944-11	PIN, CONNECTOR	R 6P					< CONNECTOR	>			
CN192	1-770-011-41	CONNECTOR, BO	ARD TO BOA	ARD 4P								
		< MOTOR >				CN701	1-695-371-31	PIN, CONNECTO	OR (PC BOARL)) 10P		
		< WOTOK >						< DIODE >				
M191	A-4660-646-A	MOTOR ASSY (LO	OADING)			D704	0.740.047.44	DIODE 051 500	AO (ENTEDA)	F0)		
******	******	******	*****	******	******	D701 D702		DIODE SEL522 DIODE SEL522	•	,		
						D702		DIODE SEL522				
*	A-4699-001-A	PANEL BOARD, C	OMPLETE (H	HK,SP,JE)		D704		DIODE SEL522				
		*****	********	******		D711	8-719-987-63	DIODE 1N4148	BM			
*	A-4699-005-A	PANEL BOARD, C	OMPLETE (I	IS CND)				< FLUORESCEN	T INDICATOR	>		
	7. 1077 000 7.	******	•					T EGOTTEGGEN	T INDIONION			
	4 055 004 04	OLIGINION (FL)				FL701	1-517-461-11	INDICATOR TUE	BE, FLUORESC	ENT		
*		CUSHION (FL) HOLDER (FL)						< IC >				
	4 777 073 01	HOLDER (IL)						(10)				
		< CAPACITOR >				IC701		IC uPD78053G				
C701	1-164-159-11	CEDAMIC	0.1uF		50V	IC702	8-759-297-23	IC M66004M8	FP			
C701	1-164-159-11		0.1uF		50V			< JUMPER RES	ISTOR <			
C702	1-126-177-11		100uF	20%	10V			< JUNI LICINES	131010			
C705	1-164-159-11		0.1uF	2070	50V	JW701	1-164-159-11	CERAMIC	0.1uF		50V	
C706	1-162-306-11		0.01uF	30%	16V	JW725	1-249-417-11		1K	5%	1/4W	F
0707	4 4 4 0 00 4 4 4	OFDANAIO	0.04 5	000/	401			2011				
C707	1-162-306-11		0.01uF	30%	16V			< COIL >				
C708	1-162-292-31		680PF	10%	50V	1.704	4 440 470 44	INDUCTOR	47.11			
C709	1-162-292-31		680PF	10%	50V	L701	1-410-478-11		47uH			
C710	1-162-292-31		680PF	10%	50V	L702	1-410-517-11	INDUCTOR	47uH			
C711	1-162-294-31	CERAIVIIC	0.001uF	10%	50V			< TRANSISTOR	`			
C712	1-162-294-31	CERAMIC	0.001uF	10%	50V			\ 110110101C				
C713	1-162-294-31		0.001uF	10%	50V	Q701	8-729-620-05	TRANSISTOR :	2SC2603-FF			
C714	1-162-294-31		0.001uF	10%	50V	Q702		TRANSISTOR				
C716	1-164-159-11		0.1uF	.070	50V	Q703		TRANSISTOR				
C717	1-164-159-11		0.1uF		50V							
0740	4 4 / 4 4 5 0 4 4	OFDANAIO	0.4 5		F01/			< RESISTOR >				
C718	1-164-159-11		0.1uF	100/	50V	D701	1 040 441 11	CARRON	1001/	F0/	1/4/4/	
C719	1-162-282-31		100PF	10%	50V	R701	1-249-441-11		100K	5%	1/4W	
C720	1-164-159-11		0.1uF	000/	50V	R702	1-247-807-31		100	5%	1/4W	
C721	1-124-638-11		22uF	20%	10V	R703	1-247-807-31		100	5%	1/4W	-
C734	1-162-282-31	CERAMIC	100PF	10%	50V	R704	1-249-393-11		10	5%	1/4W	ŀ
0705	1 1/0 000 00	OFDANAIO	10055	100/	E0)/	R705	1-247-807-31	CARBON	100	5%	1/4W	
C735	1-162-282-31		100PF	10%	50V	D707	1 040 400 44	CADDON	101/	F0/	1/4\4	
C736	1-162-282-31		100PF	10%	50V	R707	1-249-429-11		10K	5%	1/4W	_
C737	1-162-282-31		100PF	10%	50V	R708	1-249-425-11		4.7K	5%	1/4W	ŀ
C738	1-162-282-31		100PF	10%	50V	R709	1-249-429-11		10K	5%	1/4W	
C739	1-162-282-31	CERAMIC	100PF	10%	50V	R710	1-249-417-11		1K	5%	1/4W	F
						R711	1-249-429-11	CARBON	10K	5%	1/4W	
C740	1-162-282-31		100PF	10%	50V							
C741	1-162-282-31		100PF	10%	50V	R712	1-249-429-11		10K	5%	1/4W	
C742	1-162-282-31	CERAMIC	100PF	10%	50V	R713	1-249-423-11	CARBON	3.3K	5%	1/4W	F
						1						

PANEL POWER

Ref. No.	Part No.	Description			Remark		Ref. No.	Part No.	Description			Remark_
R714	1-249-423-11	CARBON	3.3K	5%	1/4W	F	S714	1-55/-303-21	SWITCH, TACTILE	(
R715	1-249-423-11		3.3K	5%	1/4W		S714		SWITCH, TACTILE	. ,		
R716	1-249-413-11		470	5%	1/4W		S716		SWITCH, TACTILE			
17710	1-247-413-11	CARDON	470	J 70	1/4 00	'	S710		SWITCH, TACTILE	` '		
R717	1-249-413-11	CARBON	470	5%	1/4W	F	3/1/	1-554-505-21	SWITCH, IACTILL			
R718	1-249-413-11		470	5%	1/4W				< VIBRATOR >			
R719	1-249-413-11		470	5%	1/4W				(VIDIVII OIC >			
R720	1-249-413-11		470	5%	1/4W		X701	1-579-233-11	VIBRATOR, CERAN	AIC (5MHz)		
R721	1-249-413-11		470	5%	1/4W		7,701	1 077 200 11	VIDIGITOR, OLIGI	viio (0ivii iz)		
						•	*******	******	******	*******	******	*****
R722	1-249-413-11	CARBON	470	5%	1/4W	F						
R723	1-249-413-11	CARBON	470	5%	1/4W	F	*	A-4699-000-A	POWER BOARD, C	OMPLETE (HK,SP,JE)
R724	1-249-413-11	CARBON	470	5%	1/4W	F			*********	******	*****	*
R725	1-249-415-11	CARBON	680	5%	1/4W	F						
R726	1-249-417-11	CARBON	1K	5%	1/4W	F	*	A-4699-004-A	POWER BOARD, C	OMPLETE (US,CND)	
									******	*******	*****	
R727	1-247-834-11	CARBON	1.3K	5%	1/4W							
R728	1-249-421-11		2.2K	5%	1/4W			7-685-871-01	SCREW +BVTT 3X	6 (S)		
R729	1-249-425-11	CARBON	4.7K	5%	1/4W	F						
R731	1-249-413-11	CARBON	470	5%	1/4W	F			< CAPACITOR >			
R732	1-249-415-11	CARBON	680	5%	1/4W	F	_					
						_	C101	1-115-364-11		22000uF	20%	16V
R733	1-249-417-11		1K	5%	1/4W	F	C102	1-164-159-11		0.1uF		50V
R734	1-247-834-11		1.3K	5%	1/4W	_	C103	1-126-933-11		100uF	20%	16V
R735	1-249-413-11		470	5%	1/4W	F	C104	1-126-933-11		100uF	20%	16V
R736	1-249-415-11		680	5%	1/4W	F	C105	1-126-933-11	ELECT	100uF	20%	16V
R737	1-249-417-11	CARBON	1K	5%	1/4W	F	0407	4 407 000 44	FLEOT	400 5	000/	401
D700	1 040 405 41	CADDON	221/	F0/	1/4/4/		C106	1-126-933-11		100uF	20%	16V
R738	1-249-435-11		33K	5%	1/4W		C107	1-126-968-11		100uF	20%	50V
R739	1-249-441-11		100K	5%	1/4W		C108	1-126-968-11		100uF	20%	50V
R740	1-249-429-11		10K	5%	1/4W		C109	1-126-969-11		220uF	20%	50V
R743	1-249-429-11		10K	5%	1/4W		C110	1-126-967-11	ELECT	47uF	20%	50V
R744	1-249-429-11	CARBON	10K	5%	1/4W		C111	1-126-967-11	ELECT	47uF	20%	50V
R745	1-249-441-11	CARBON	100K	5%	1/4W		C111	1-164-159-11		0.1uF	2070	50V 50V
R746	1-249-441-11		100K	5%	1/4W		C112	1-126-968-11		100uF	20%	50V 50V
R747	1-249-413-11		470	5%	1/4W	F	C113	1-126-968-11		100uF	20%	50V
R901	1-249-441-11		100K	5%	1/4W	'	C114	1-126-964-11		100ui	20%	50V
R902	1-249-441-11		100K	5%	1/4W		0121	1-120-704-11	LLLOI	Tour	2070	30 V
11702	1 247 441 11	ONINDON	TOOK	370	17-700		C122	1-126-947-11	FLECT	47uF	20%	35V
R903	1-249-441-11	CARBON	100K	5%	1/4W		C123	1-164-159-11		0.1uF	2070	50V
R904	1-249-441-11		100K	5%	1/4W		C124	1-110-489-11		1F		5.5V
							C125	1-124-903-11		1uF	20%	50V
		< ROTARY ENCOD	ER >				C126	1-164-159-11		0.1uF		50V
RE701	1-467-938-11	ENCODER, ROTAR	Y (SELECTO	R)			C127	1-126-933-11	ELECT	100uF	20%	16V
							C130	1-164-159-11	CERAMIC	0.1uF		50V
		< SWITCH >					C131	1-126-947-11	ELECT	47uF	20%	35V
							C135	1-164-159-11	CERAMIC	0.1uF		50V
S702	1-554-303-21		. ,				C136	1-164-159-11	CERAMIC	0.1uF		50V
S703	1-554-303-21											
S704		SWITCH, TACTILE	. ,				C139	1-162-306-11		0.01uF	30%	16V
S705		SWITCH, TACTILE)			C140	1-164-159-11		0.1uF		50V
S706	1-554-303-21	SWITCH, TACTILE	(SHUFFLE)				C141	1-164-159-11		0.1uF		50V
0707	4 554 000 00	CAUTOU TAGE!	(DD005111	`			C144	1-126-947-11		47uF	20%	35V
S707		SWITCH, TACTILE)			C145	1-126-923-11	ELECT	220uF	20%	10V
S709	1-554-303-21		` ,				0147	1 10/ 000 11	FLECT	220	2007	101/
S710		SWITCH, TACTILE					C147	1-126-923-11		220uF	20%	10V
S711		SWITCH, TACTILE					C148	1-126-933-11		100uF	20%	16V
S712	1-554-303-21	SWITCH, TACTILE	(EDIT/NO)				C149 C150	1-126-933-11 1-126-947-11		100uF 47uF	20% 20%	16V 35V
S713	1-55/1-202-21	SWITCH, TACTILE	(FNTFD/VEG	3)			C150 C151	1-126-947-11		47ur 470uF	20%	35V 10V
3113	1-334-303-2 I	JVVITOII, IACIILE	(LIVILIVIES	"			0131	1-120-720-11	LLLUI	T/UUI	2070	101



Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark	
C152	1-126-941-11	•	470uF	20%	25V	110111101	<u>- art 1101</u>	< IC >			romani	
C153	1-126-941-11		470uF	20%	25V							
C202	1-162-600-11		0.0047uF	30%	16V	IC101	8-759-231-53					
C203	1-162-294-31		0.001uF	10%	50V	IC102		IC SN74HCU	D4AN			
C204	1-126-947-11	ELECT	47uF	20%	35V	IC103 IC105		IC M62005L	(MD DIGITAL OP	TICAL D	ICITAL I	VI)
C205	1-162-294-31	CERAMIC	0.001uF	10%	50V	IC103		IC M5218AP	(IVID DIGITAL OF	HCAL,D	IGITALI	IV)
C206	1-162-282-31		100PF	10%	50V							
C301	1-164-159-11		0.1uF		50V			< IC LINK >				
C302	1-164-159-11		0.1uF	200/	50V	A 10D101	1 522 020 11	LINK 10 (DDE	1000 1 04)/11/	ים וב/		
C402	1-162-600-11	CERAMIC	0.0047uF	30%	16V	∆ ICP101	1-532-839-11	LI NK, IC (PRE	1000 1.0A)(HK,S	sP,JE)		
C403	1-162-294-31	CERAMIC	0.001uF	10%	50V			< JACK >				
C404	1-126-947-11		47uF	20%	35V							
C405	1-162-294-31		0.001uF	10%	50V	J101	1-695-188-31	JACK, PIN 4P	(MD,ANALOG IN	/OUT)		
C406	1-162-282-31	CERAIVIIC	100PF	10%	50V			< COIL >				
		< CONNECTOR >				1.404	4 440 470 44	INDUCTOR	47.11			
CN101	1 770 150 21	HOUSING, CONNE	CTOD 7D (S	VCTEM	CONTDOL)	L101 L103	1-410-478-11 1-412-473-21		47uH 0uH			
		CONNECTOR, FFC	`	ISIEW	CONTROL)	L103	1-412-473-21	INDUCTOR	Oun			
CN104		PIN, CONNECTOR) 10P				< TRANSISTO	R >			
		< DIODE >				Q101	0 720 110 01	TRANSISTOR	2CD1114 V			
		< DIODE >				Q101		TRANSISTOR				
D101	8-719-200-77	DIODE 10E2N				Q103		TRANSISTOR				
D102		DIODE 10E2N				Q104		TRANSISTOR				
D103		DIODE 1N4148N				Q105	8-729-209-15	TRANSISTOR	2SD2012			
D104		DIODE 114148N	1			010/	0.700.000.15	TDANICICTOD	2002012			
D105	8-719-200-82	DIODE 11ES2				Q106 Q107		TRANSISTOR TRANSISTOR				
D106	8-719-200-82	DIODE 11ES2				Q107		TRANSISTOR				
D107		DIODE 11ES2				Q109		TRANSISTOR				
D108		DIODE 11ES2				Q110	8-729-119-76	TRANSISTOR	2SA1175-HFE			
D109		DIODE 11ES2				0444	0.700.000.75	TRANSISTOR	DT44.44E0			
D110	8-719-200-82	DIODE 11ES2				Q111 Q112		TRANSISTOR TRANSISTOR				
D111	8-719-002-70	DIODE UZL-36L				Q112 Q113		TRANSISTOR				
D112		DIODE UZP-5.6B	C-TP			Q201		TRANSISTOR				
D113	8-719-987-63	DIODE 1N4148N	1			Q202	8-729-141-30	TRANSISTOR	2SC3623A-LK			
D114		DIODE 11EQS04										
D115	8-719-210-21	DIODE 11EQS04				Q401		TRANSISTOR				
D116	8_710_087_63	DIODE 1N4148W	1			Q402	8-729-141-30	TRANSISTOR	25U3023A-LK			
D117		DIODE 1N4148N						< RESISTOR >				
D118		DIODE 1N4148N										
D119		DIODE 1N4148N				R101	1-260-091-11		220	5%	1/2W	
D120	8-719-987-63	DIODE 1N4148N	1			R102	1-260-091-11		220	5%	1/2W	
D101	0.710.200.02	DIODE 11FC2				R103	1-249-429-11		10K	5%	1/4W	г
D121 D122		DIODE 11ES2 DIODE 11ES2				R110 R111	1-249-413-11 1-249-413-11		470 470	5% 5%	1/4W 1/4W	
D122		DIODE HZS6B1L				13111	1 2 17 TIJ-11	J. 11.DON	110	570	. , ¬, v v	•
D124		DIODE HZS6C1L				R112	1-249-441-11	CARBON	100K	5%	1/4W	
D125	8-719-200-82	DIODE 11ES2				R114	1-249-417-11		1K	5%	1/4W	F
D10/	0.710.000.00	DIODE 44500				R115	1-249-429-11		10K	5%	1/4W	
D126	8-719-200-82	DIODE 11ES2				R116 R117	1-249-437-11 1-247-891-00		47K 330K	5% 5%	1/4W 1/4W	
		< FUSE >									1/ 11 V V	
						R118	1-249-417-11		1K	5%	1/4W	F
 Æ F101	1-532-776-21	FUSE, MICRO (SE	CONDARY) (1A 125\	/) (US,CND)	R120	1-247-807-31		100	5% E%	1/4W	
						R127 R129	1-247-807-31 1-247-887-00		100 220K	5% 5%	1/4W 1/4W	
						11127	1 2-77-007-00	JANDON .	22011	570	1/ T V V	

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number

specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

Ne les remplacer que par une piéce portant le numéro spécifié.

POWER

Ref. No.	Part No.	Description			Remark		Ref. No.	Part No.	Description	Remark
							IXCI. INO.	r art ivo.		Kemark
R131	1-247-887-00	CARBON	220K	5%	1/4W				MISCELLANEOUS **********	
R132	1-247-807-31	CARBON	100	5%	1/4W					
R133	1-247-807-31	CARBON	100	5%	1/4W		55	1-776-417-11	WIRE (FLAT TYPE) (18 CORE)	
R134	1-249-437-11	CARBON	47K	5%	1/4W		56	1-776-416-11	WIRE (FLAT TYPE) (30 CORE)	
R135	1-247-895-00	CARBON	470K	5%	1/4W		57	1-776-168-11	WIRE (FLAT TYPE) (21 CORE)	
R136	1-247-807-31	CARBON	100	5%	1/4W		59	1-775-925-11	WIRE (FLAT TYPE) (10 CORE)	
							157 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8-583-009-11	OPTICAL PICK-UP KMS-210A/J-N	
R137	1-247-887-00	CARBON	220K	5%	1/4W					
R138	1-247-887-00	CARBON	220K	5%	1/4W		FL701	1-517-461-11	INDICATOR TUBE, FLUORESCENT	
R140	1-249-421-11	CARBON	2.2K	5%	1/4W	F	HR901	1-500-304-21	HEAD, OVER LIGHT (RF322-74A)	
R141	1-249-421-11	CARBON	2.2K	5%	1/4W	F	M101	A-4660-651-A	MOTOR ASSY (SLED)	
R142	1-249-416-11	CARBON	820	5%	1/4W	F	M102	A-4660-650-A	CHASSIS ASSY, BU (SPINDLE)	
							M191	A-4660-646-A	MOTOR ASSY (LOADING)	
R143	1-247-850-11	CARBON	6.2K	5%	1/4W				,	
R144	1-249-393-11	CARBON	10	5%	1/4W	F	S102	1-762-148-11	SWITCH, PUSH (2 KEY) (REFLECT/I	PROTECT)
R145	1-247-807-31	CARBON	100	5%	1/4W					•
R146	1-249-414-11		560	5%	1/4W	F	*******	******	********	*****
R150	1-247-807-31		100	5%	1/4W					

R201	1-249-434-11	CARBON	27K	5%	1/4W				HARDWARE LIST	
R202	1-249-429-11		10K	5%	1/4W				*******	
R203	1-249-421-11	CARBON	2.2K	5%	1/4W	F				
R204	1-249-419-11		1.5K	5%	1/4W	F	#1	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
R205	1-249-419-11		1.5K	5%	1/4W		#2		SCREW +B 2.6X5	
							#3	7-627-852-08	SCREW, PRECISION +P 1.7X2.5	
R206	1-247-887-00	CARBON	220K	5%	1/4W		#4		SCREW +P 2X6 TYPE2 NON-SLIT	
R207	1-249-421-11		2.2K	5%	1/4W	F	#5		TPG +P 2X8, TYPE 2, NON-SLIT	
R208	1-249-421-11	CARBON	2.2K	5%	1/4W	F			, ,	
R209	1-249-411-11	CARBON	330	5%	1/4W		#6	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
R210	1-249-433-11		22K	5%	1/4W		#7		SCREW +BVTP 3X10 TYPE2 N-S	
							#8	7-685-862-09	SCREW +BVTT 2.6X6 (S)	
R301	1-247-807-31	CARBON	100	5%	1/4W		#9		SCREW +BVTT 3X6 (S)	
R302	1-249-417-11		1K	5%	1/4W	F	#10		SCREW +PTT 2X4 (S)	
R401	1-249-434-11		27K	5%	1/4W					
R402	1-249-429-11		10K	5%	1/4W		#11	7-685-872-09	SCREW +BVTT 3X8	
R403	1-249-421-11		2.2K	5%	1/4W	F				
R404	1-249-419-11	CARBON	1.5K	5%	1/4W	F				
R405	1-249-419-11		1.5K	5%	1/4W					
R406	1-247-887-00	CARBON	220K	5%	1/4W					
R407	1-249-421-11	CARBON	2.2K	5%	1/4W	F				
R408	1-249-421-11	CARBON	2.2K	5%	1/4W	F				
R409	1-249-411-11	CARBON	330	5%	1/4W					
R410	1-249-433-11	CARBON	22K	5%	1/4W					
		< SWITCH >								
S101	1-554-303-21	SWITCH, TACTII	LE (RESET)							
	1 00 1 000 21		` ,							

The components identified by mark \triangle or dotted line with mark \triangle are

Replace only with part number specified.

Les composants identifiés par une marque rianlge sont critiques pour la sécurité.

Ne les remplacer que par une

MDS-M9

SONY

SERVICE MANUAL

US Model Canadian Model E Model Tourist Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject: 1. CORRECTION

2. PARTS CHANGED

3. BOARD CHANGED

4. CHANGE OF MECHANISM DECK

(ECN-CD600402)

1. CORRECTION

• Correct your service manual as shown below.

: indicates corrected portion.

Page			INCORRECT				CORRECT	
	Ref. No.	Part No.	<u>Description</u> EXPLODED VIEWS ***	Remark	Ref. No.	Part No.	Description *** EXPLODED VIEWS ***	<u>Remark</u>
61	62	3-703-044-26	LABEL, CAUTION (US, CND)				(Deletion)	
	(US, C	62 ND)	53 #7 000 000	1000 #7	(US, C		`. \	#7 #7 #7 #7

• Abbreviation

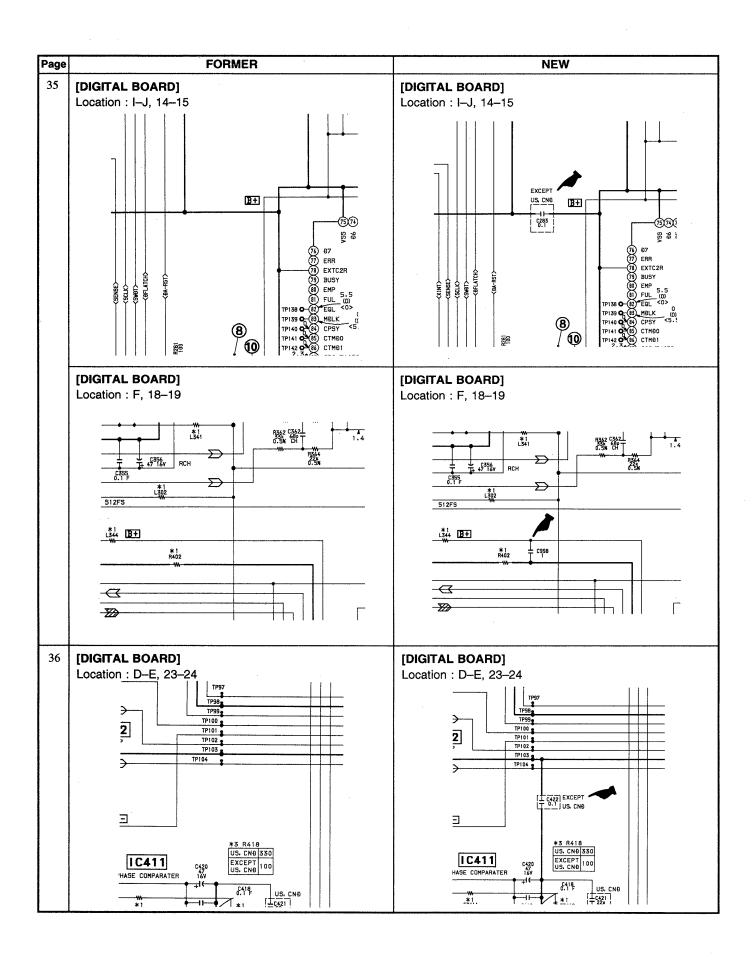
CND: Canadian model HK : Hong Kong model
SP : Singapore model
JE : Tourist model

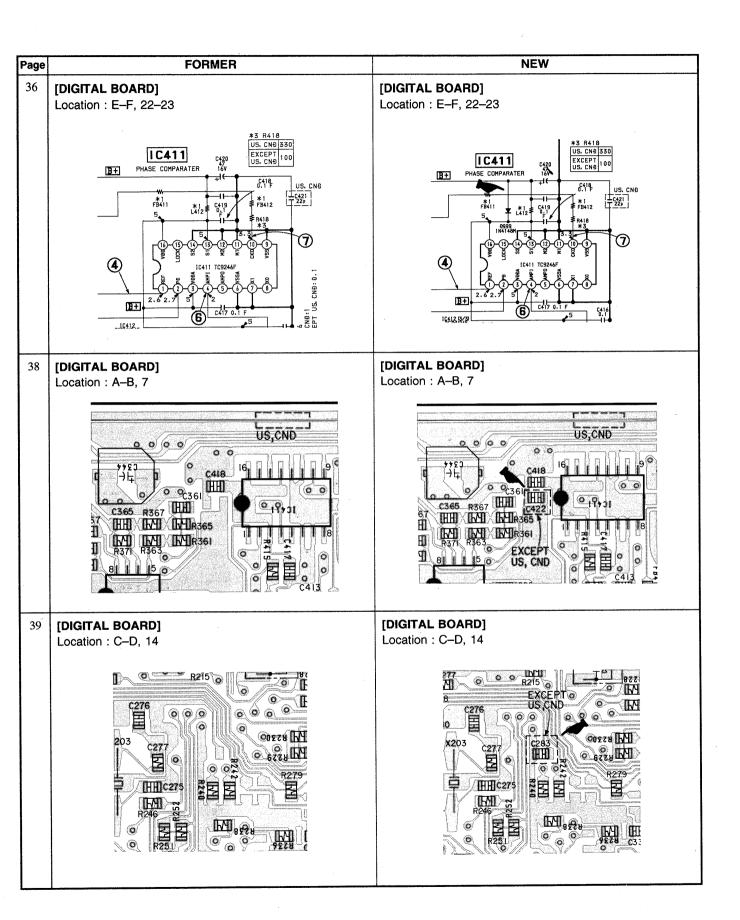
2. PARTS CHANGED

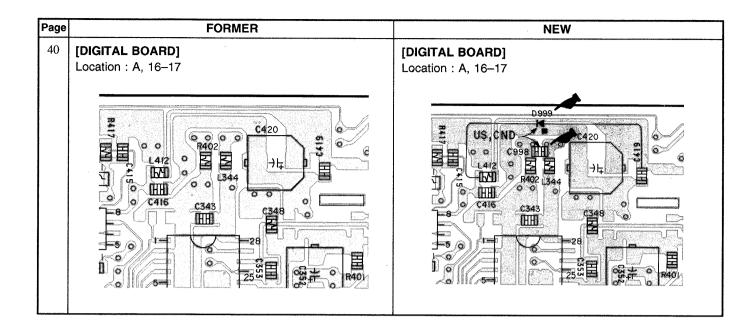


: indicates changed portion.

Page			FORMER				NEW	
	Ref. No.	Part No.	Description	<u>Remark</u>	Ref. No.	Part No.	Description	Remark
		**	** EXPLODED VIEWS ***			***	EXPLODED VIEWS ***	
60	* 22	4-970-927-6 —	1 CASE		* 22 22	4-970-927-61 4-970-927-91	CASE (SP, HK, JE) CASE (US, CND)	







• ELECTRICAL PARTS LIST

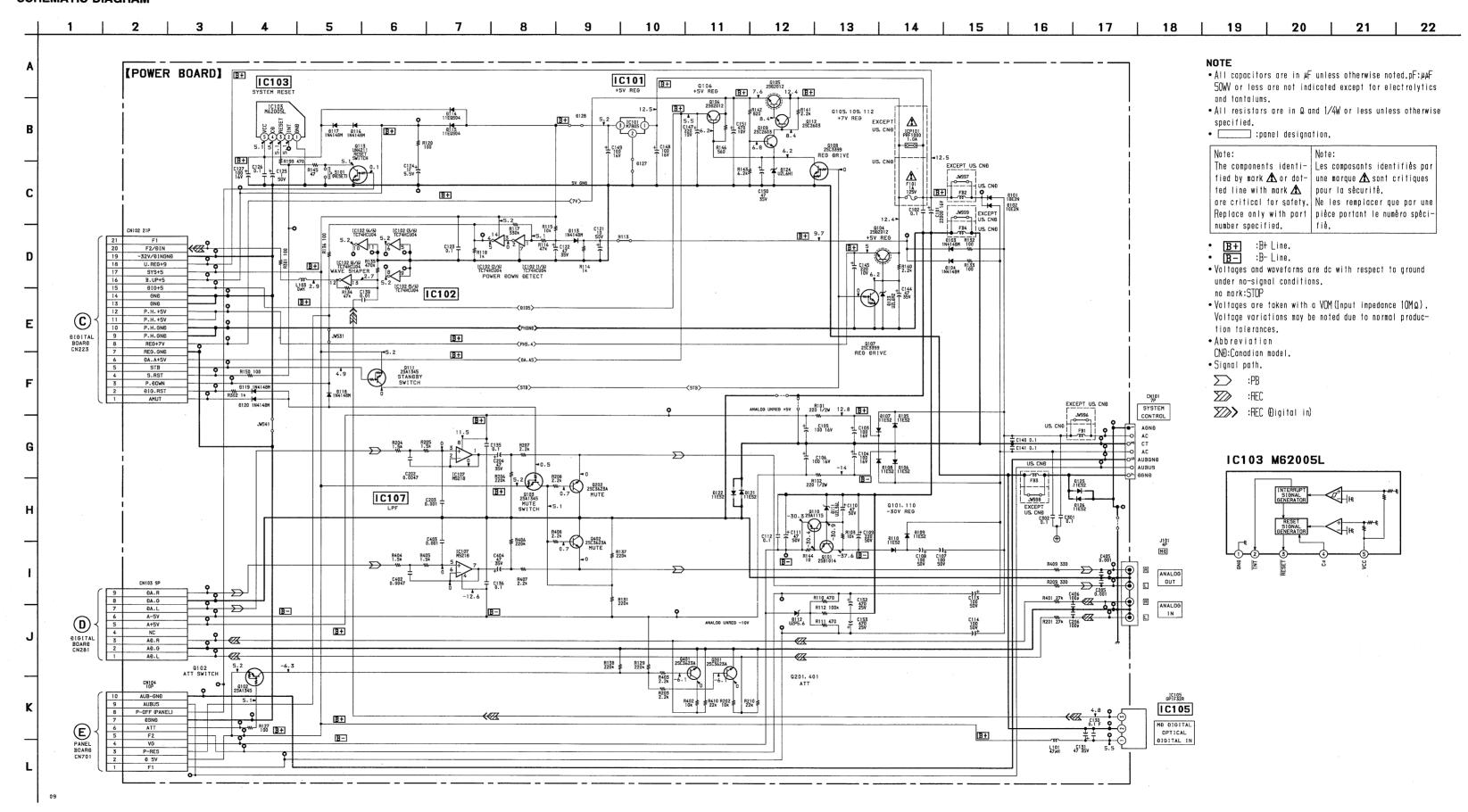
Page		· · · · · · · · · · · · · · · · · · ·	FORMER					NEW		
	Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark
65			*** BD BOARD **	**				*** BD BOARD **	*	
	IC121 IC121	8-752-375-06 8-752-375-36				IC121	8-752-378-79	IC CXD2535CR		
66		**	* DIGITAL BOARD	***			**	* DIGITAL BOARD	***	
		***************************************		- Landing Groups		C283	1-163-038-91	CERAMIC CHIP	0.1uF	25V (HK, SP, JE)
	C416	1-163-038-91	CERAMIC CHIP	0.1uF	25V	C416	1-163-038-91	CERAMIC CHIP	0.1uF	25V
	C416	1-163-346-11	CERAMIC CHIP	1uF	(HK, SP, JE) 16V (US, CND)					
67						C998	1-164-346-11	CERAMIC CHIP	1uF	16V (US, CND)
						C422	1-163-038-91	CERAMIC CHIP	0.1uF	25V /
	FB272 FB411	1-414-551-11 1-414-551-11	MICRO INDUCTO	, , ,	, ,	D999 FB272 FB411	8-719-987-63 1-414-234-11 1-414-234-11	DIODE IN4148M INDUCTOR, FERF INDUCTOR, FERF	RITE BEAD	
	L341 L344	1-414-551-11 1-414-551-11	MICRO INDUCTO			L341 L344	1-414-234-11 1-414-234-11	INDUCTOR, FERF		
68	R401	1-164-161-11	CERAMIC CHIP	2200PF 10%	50V	R401	1-163-025-11	CERAMIC CHIP	0.001uF	50V
	R402	1-414-515-11	MICRO INDUCTO	OR (CHIP) (US,	CND)	R402	1-414-234-11	INDUCTOR, FERR	RITE BEAD ((US, CND) (US, CND)

• Abbreviation

CND: Canadian model
HK: Hong Kong model
SP: Singapore model
JE: Tourist model

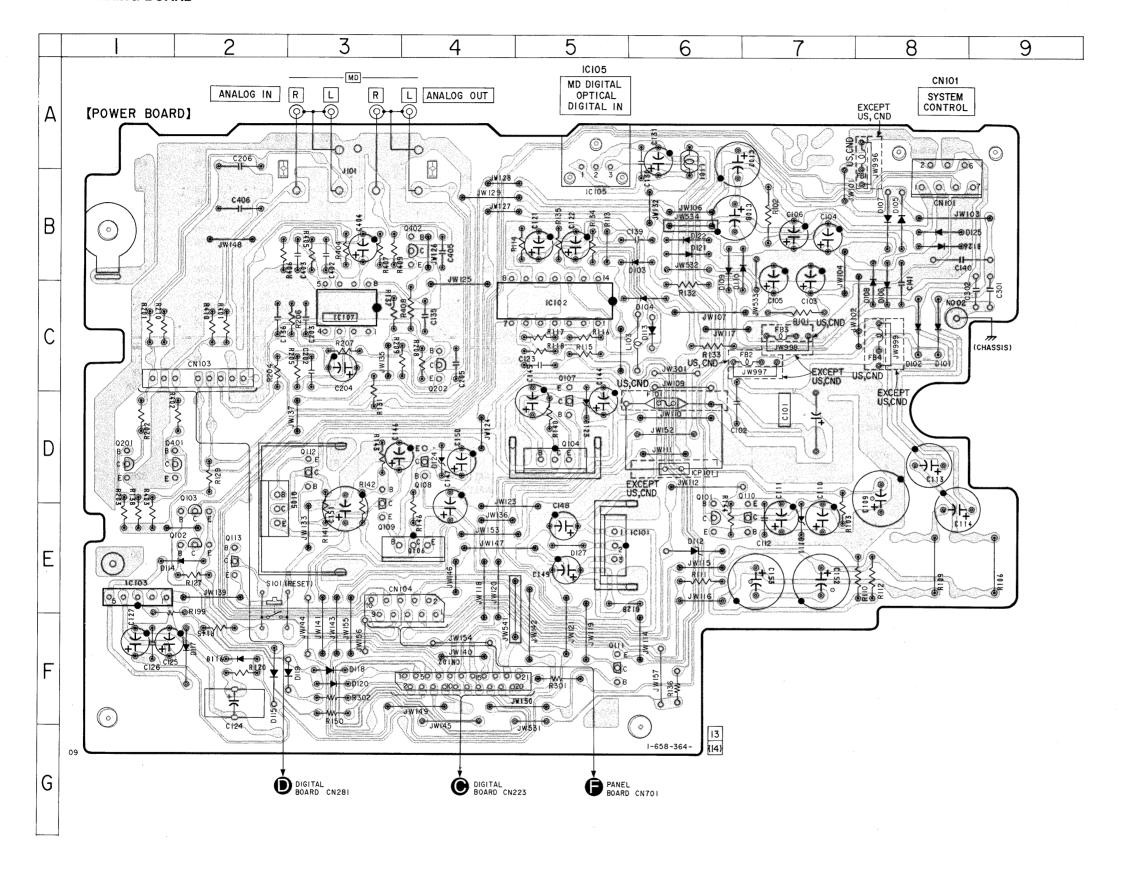
3. BOARD CHANGED

SCHEMATIC DIAGRAM



--- 8 ---

PRINTED WIRING BOARD



Semiconductor Location

Ref. No.	Location
D101 D102 D103 D104 D105 D106 D107 D108 D109 D110 D111 D112 D113 D114 D115 D116 D117 D118 D119 D120 D121 D122 D123 D124 D125 D126	C-8 C-6 C-6 B-8 C-6 C-6 C-6 E-7 C-6 C-2 E-2 E-2 E-3 F-3 F-6 C-6 D-4 B-8 B-8 B-8 B-8 B-8 B-8 B-8 B-8 B-1 B-1 B-1 B-1 B-1 B-1 B-1 B-1 B-1 B-1
IC101 IC102 IC103 IC105 IC107	E-5 C-5 E-1 B-5 C-3
Q101 Q102 Q103 Q104 Q105 Q106 Q107 Q108 Q109 Q110 Q111 Q201 Q202 Q401 Q402	E-6 E-2 D-5 D-3 E-4 D-5 D-4 E-3 E-7 F-5 D-1 C-4 D-1 B-4

Note:

- · o- : parts extracted from the component side.
- Pattern from the side which enable seeing.
- Abbreviation

CND: Canadian model.

ELECTRICAL PARTS LIST

Note:

The components identified by mark \triangle or dotted line with mark \triangle are critical

Replace only with part number speci-

Les composants identifiés par une marque A sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- · Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS

All resistors are in ohms METAL: Metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F: nonflammable

SEMICONDUCTORS

In each case, u: μ , for example:

 $uA...: \mu A..., uPA...: \mu PA..., uPB...: \mu PB...,$

 $uPC...: \mu\ PC..., uPD...: \mu\ PD...$

- CAPACITORS
 - $uF: \mu F$
- · COILS uH:μH
- Abbreviation

CND: Canadian model

HK: Hong Kong model SP : Singapore model

: Tourist model

Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>	Ref. No.	Part No.	Description			Remark
*	A-4699-000-A	POWER BOARD, 0				C151	1-126-925-11	ELECT	470uF	20%	10V
						C152	1-126-941-11	ELECT	470uF	20%	25V
*	A-4699-004-A	POWER BOARD, O	COMPLETE (JS,CND)	C153	1-126-941-11	ELECT	470uF	20%	25V
		********	******	*****	*	C202	1-162-600-11	CERAMIC	0.0047uF	30%	16V
						C203	1-162-294-31	CERAMIC	0.001uF	10%	50V
	7-685-871-01	SCREW +BVTT 3X	(6 (S)			C204	1-126-947-11	ELECT	47uF	20%	35V
		< CAPACITOR >				C205	1-162-294-31		0.001uF	10%	50V
						C206	1-162-282-31		100PF	10%	50V
C101	1-115-364-11		22000uF	20%	16V	C301	1-164-159-11		0.1uF		50V
C102	1-164-159-11	CERAMIC	0.1uF		50V	C302	1-164-159-11		0.1uF	000/	50V
C103	1-126-933-11	ELECT	100uF	20%	16V	C402	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C104	1-126-933-11	ELECT	100uF	20%	16V			05511110	0.004 5	4001	F0\/
C105	1-126-933-11	ELECT	100uF	20%	16V	C403	1-162-294-31		0.001uF	10%	50V
						C404	1-126-947-11		47uF	20%	35V
C106	1-126-933-11		100uF	20%	16V	C405	1-162-294-31		0.001uF	10%	50V
C107	1-126-968-11	ELECT	100uF	20%	50V	C406	1-162-282-31	CERAMIC	100PF	10%	50V
C108	1-126-968-11	ELECT	100uF	20%	50V						
C109	1-126-969-11		220uF	20%	50V			< CONNECTOR >			
C110	1-126-967-11	ELECT	47uF	20%	50V	CN101	1-770-158-21	HOUSING, CONN	ECTOR 7P (S	YSTEM	CONTROL)
C111	1-126-967-11	ELECT	47uF	20%	50V	CN102	1-770-649-11	CONNECTOR, FF	C/FPC 21P		
C112	1-164-159-11	CERAMIC	0.1uF		50V	CN104	1-695-333-41	PIN, CONNECTO	R (PC BOARD) 10P	
C113	1-126-968-11	ELECT	100uF	20%	50V				,		
C114	1-126-968-11	ELECT	100uF	20%	50V			< DIODE >			
C121	1-126-964-11		10uF	20%	50V	1					
						D101	8-719-200-77	DIODE 10E2N			
C122	1-126-947-11	ELECT	47uF	20%	35V	D102	8-719-200-77	DIODE 10E2N			
C123	1-164-159-11		0.1uF		50V	D103	8-719-987-63	DIODE 1N4148	И		
C124	1-110-489-11		1F		5.5V	D104		DIODE 1N41481			
C125	1-126-960-11		1uF	20%	50V	D105	8-719-200-82	DIODE 11ES2			
C126	1-164-159-11		0.1uF		50V						
						D106	8-719-200-82	DIODE 11ES2			
C127	1-126-933-11	ELECT	100uF	20%	16V	D107	8-719-200-82	DIODE 11ES2			
C130	1-164-159-11	CERAMIC	0.1uF		50V	D108	8-719-200-82	DIODE 11ES2			
C131	1-126-947-11		47uF	20%	35V	D109	8-719-200-82	DIODE 11ES2			
C135	1-164-159-11	CERAMIC	0.1uF		50V	D110	8-719-200-82	DIODE 11ES2			
C136	1-164-159-11		0.1uF		50V						
						D111	8-719-002-70	DIODE UZL-36L			
C139	1-162-306-11	CERAMIC	0.01uF	30%	16V	D112	8-719-014-73	DIODE UZP-5.6	BC-TP		
C140	1-164-159-11	CERAMIC	0.1uF		50V	D113		DIODE 1N4148			
C141	1-164-159-11	CERAMIC	0.1uF		50V	D114	8-719-210-21	DIODE 11EQSO	4		
C144	1-126-947-11	ELECT	47uF	20%	35V	D115	8-719-210-21	DIODE 11EQSO	4		
C145	1-126-923-11	ELECT	220uF	20%	10V						
						D116	8-719-987-63				
C147	1-126-923-11	ELECT	220uF	20%	10V	D117	8-719-987-63				
C148	1-126-933-11	ELECT	100uF	20%	16V	D118		DIODE 1N4148			
C149	1-126-933-11	ELECT	100uF	20%	16V	D119	8-719-987-63				
C150	1-126-947-11	ELECT	47uF	20%	35V	D120	8-719-987-63	DIODE 1N4148	M		
						1					

POWER

•										
Ref. No.	Part No.	<u>Description</u>	Remark	Ref. No.	Part No.	Description			<u>Remark</u>	
D121	8-719-200-82	DIODE 11ES2		Q401	8-729-141-30	TRANSISTOR	2SC3623A-LK			
D122	8-719-200-82	DIODE 11ES2		Q402			2SC3623A-LK			
D123	8-719-933-36	DIODE HZS6B1L								
D124	8-719-933-39	DIODE HZS6C1L				< RESISTOR >				
D125		DIODE 11ES2				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				
0120	0 710 200 02	51002 11602		R101	1-260-091-11	CARRON	220	5%	1/2W	
D126	8-719-200-82	DIODE 11ES2		R102	1-260-091-11	CARBON	220	5%	1/2W	
DIZU	0 710 200 02	51002 11202		R103	1-249-429-11		10K	5%	1/4W	
		< FUSE >		R110	1-249-413-11		470	5%	1/4W	F
		(1002)		R111	1-249-413-11		470	5%	1/4W	
 ∆F101	1-532-776-21	FUSE, MICRO (SECONDARY) (1A 125V	/\ /LIC CND\	NIII	1-243-410-11	OANDON	410	J /0	1/777	•
2121101	1-332-110-21	TOSE, MICHO (SECONDANT) (TA 123V	(U3,UND)	R112	1-249-441-11	CARRON	100K	5%	1/4W	
•		< FILTER >		R114	1-249-417-11	CARBON	1K	5%	1/4W	E
		< rilien >		R115	1-249-429-11		10K	5%	1/4W	•
FB1	1.404.100.11	FILTER, NOISE (US,CND)		R116	1-249-437-11		47K	5%	1/4W	
				R117	1-247-891-00		330K	5%	1/4W	
FB2		FILTER, NOISE (US,CND)		NII/	1-247-051-00	CANDON	JUUK	J /0	1/477	
FB3 FB4		FILTER, NOISE (US,CND)		D110	1-249-417-11	CADDON	1K	5%	1/4W	E
FD4	1-424-122-11	FILTER, NOISE (US,CND)		R118	1-247-807-31		100	5%	1/4W	
		.10.		R120				5% 5%		
		< IC >		R127	1-247-807-31		100		1/4W	
10404	0.750.004.50	10 7470050		R129	1-247-887-00		220K	5%	1/4W	
IC101	8-759-231-53	IC TA7805S		R131	1-247-887-00	CARBUN	220K	5%	1/4W	
IC102	8-759-917-18	IC SN74HCU04AN		0400	1 047 007 01	CADDON	100	EQ/	1/4W	
IC103	8-759-327-15	IC M62005L	NOTAL IN	R132	1-247-807-31		100	5%		
IC105	8-749-921-11	IC GP1F32R (MD DIGITAL OPTICAL,	JIGHAL IN)	R133	1-247-807-31		100	5%	1/4W	
IC107	8-759-634-51	IC M5218AP		R134	1-249-437-11		47K	5%	1/4W	
		10 1 1917		R135	1-247-895-00		470K	5%	1/4W	
		< IC LINK >		R136	1-247-807-31	CARBON	100	5%	1/4W	
4 100101	4 500 000 44	11 NW 10 (DDE1000 1 OA) (UK OD 15)		2407	4 047 007 00	OADDON	0001/	E0/	4 /4\4/	
△ ICP101	1-532-839-11	LI NK, IC (PRF1000 1.0A)(HK,SP,JE)		R137	1-247-887-00		220K	5%	1/4W	
				R138	1-247-887-00		220K	5%	1/4W	_
		< JACK >		R140	1-249-421-11		2.2K	5%	1/4W	
				R141	1-249-421-11		2.2K	5%	1/4W	
J101	1-695-188-31	JACK, PIN 4P (MD, ANALOG IN/OUT) (R142	1-249-416-11	CARBON	820	5%	1/4W	r
J101	1-770-720-11	JACK, PIN 4P (MD,ANALOG IN/OUT) (US, CND)				2 21/	5 0/	4/414/	
•				R143	1-247-850-11		6.2K	5%	1/4W	_
				R144	1-249-393-11		10	5%	1/4W	
		< COIL >		R145	1-249-401-11		47	5%	1/4W	
				R146	1-249-414-11		560	5%	1/4W	r
L101	1-410-478-11	INDUCTOR 47uH		R150	1-247-807-31	CARBON	100	5%	1/4W	
L103	1-412-473-21	INDUCTOR 0uH								_
				R199	1-249-413-11		470	5%	1/4W	r
		< TRANSISTOR >		R201	1-249-434-11		27K	5%	1/4W	
			•	R202	1-249-429-11		10K	5%	1/4W	_
Q101		TRANSISTOR 2SB1116-K		R203	1-249-421-11		2.2K	5%	1/4W	
Q102		TRANSISTOR DTA144ES		R204	1-249-419-11	CARBON	1.5K	5%	1/4W	F
Q103		TRANSISTOR DTA144ES					. =14	5 0/	4 (414)	-
Q104		TRANSISTOR 2SD2012		R205	1-249-419-11		1.5K	5%	1/4W	F
Q105	8-729-209-15	TRANSISTOR 2SD2012		R206	1-247-887-00		220K	5%	1/4W	_
•				R207	1-249-421-11		2.2K	5%	1/4W	
Q106		TRANSISTOR 2SD2012		R208	1-249-421-11		2.2K	5%	1/4W	۲
Q107		TRANSISTOR DTC144ES		R209	1-249-411-11	CARBON	330	5%	1/4W	
Q108		TRANSISTOR DTC144ES		_			00:1			
Q109		TRANSISTOR 2SC2603-EF		R210	1-249-433-11		22K	5%	1/4W	
Q110	8-729-119-76	TRANSISTOR 2SA1175-HFE		R301	1-247-807-31		100	5%	1/4W	_
				R302	1-249-417-11		1K	5%	1/4W	۲
Q111		TRANSISTOR DTA144ES		R401	1-249-434-11		27K	5%	1/4W	
Q112		TRANSISTOR 2SC2603-EF		R402	1-249-429-11	CARBON	10K	5%	1/4W	
Q113		TRANSISTOR DTC114ES		-						_
Q201		TRANSISTOR 2SC3623A-LK		R403	1-249-421-11		2.2K	5%	1/4W	
Q202	8-729-141-30	TRANSISTOR 2SC3623A-LK		R404	1-249-419-11		1.5K	5%	1/4W	
				R405	1-249-419-11	CARBON	1.5K	5%	1/4W	F
				1						

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.

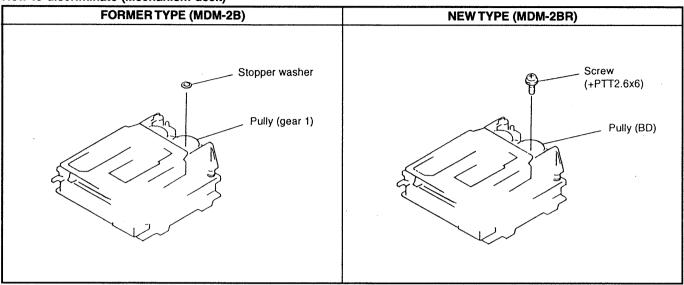
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	-		Remark	
R406	1-247-887-00	CARBON	220K	5%	1/4W	
R407	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R408	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R409	1-249-411-11	CARBON	330	5%	1/4W	
R410	1-249-433-11	CARBON	22K	5%	1/4W	
		< SWITCH >				
S101	1-762-559-11	SWITCH, TACTII	LE (RESET)			

4. CHANGE OF MECHANISM DECK

The mechanism deck has been changed from MDM-2B to MDM-2BR.
Refer to How to discriminate (Mechanism deck) so that there is no interchangeability between MDM-2B and MDM-2BR.

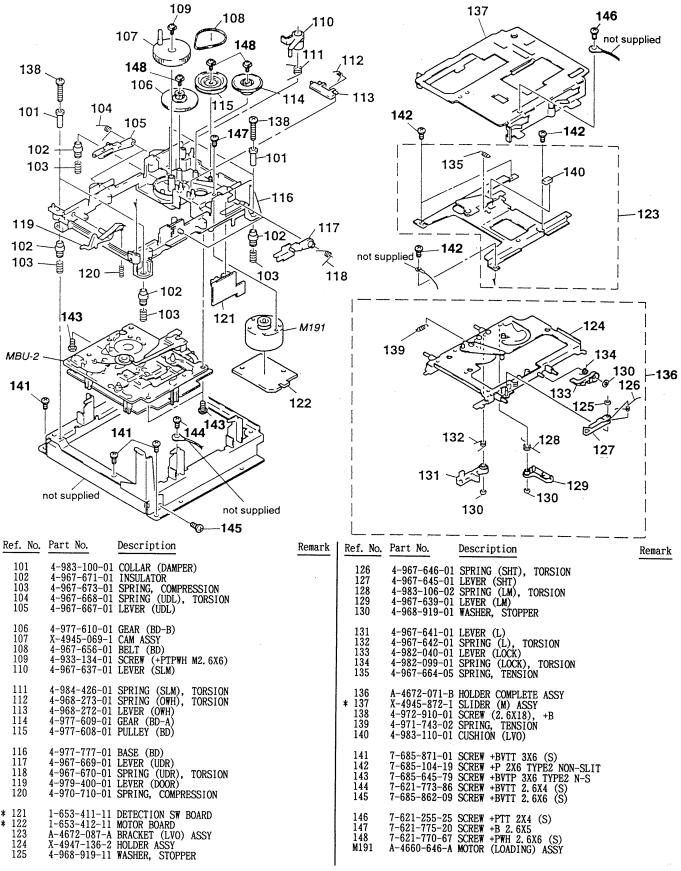
How to discriminate (Mechanism deck)



NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

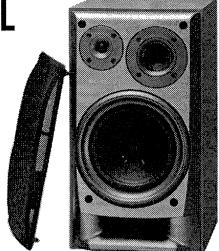
MD MECHANISM SECTION (MDM-2BR)



MDS-M9

SS-EX55G/EX55P

SERVICE MANUAL



US Model Canadian Model SS-EX55G/EX55P

> E Model Tourist Model SS-EX55G

SS-EX55G is the speaker system in DHC-MD7/MHC-EX50/EX70AV and SS-EX55P is it in MHC-W77AV.

Photo: SS-EX55G

SPECIFICATIONS

Speaker system

3 way bass reflex

Speaker units

Woofer: 17 cm dia, cone type Tweeter: 5 cm dia, cone type

Super-Tweeter:

2 cm dia, dome type

Rated impedance

6 ohms

Dimensions

Approx. 225 \times 410 \times 295 mm (w/h/d)

incl. projecting parts and controls

Mass

Approx. 5.6 kg

Design and specifications subject to change without notice.



EXPLODED VIEW AND PARTS LIST

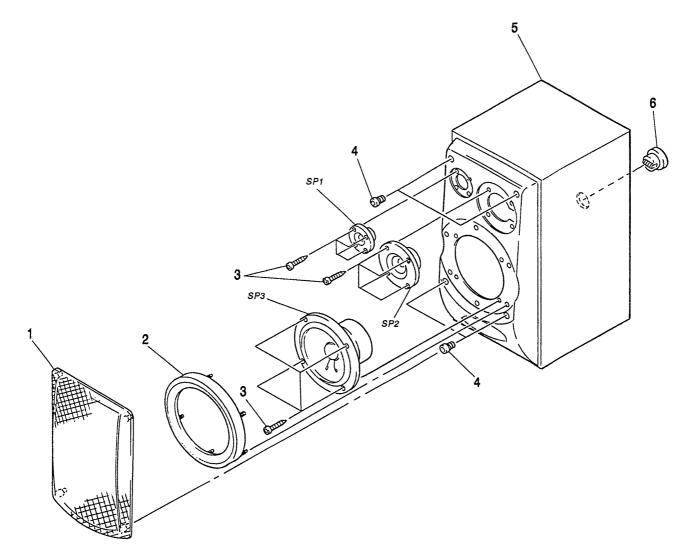
NOTE:

- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

Abbreviation

CND: Canadian MY: Malaysia
EA: Saudi Arabia SP: Singapore
HK: Hong Kong TH: Thailand

JE : Tourist



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1 2 3	4-980-670-01	FRAME ASSY, GRILLE FRAME, ORNAMENT SCREW (3.5×20), TAPPING				ES & PACKING MATERIALS ********	
4 * 5	4-912-253-01			* * *	4-981-796-0	1 CUSHION (EX) (EX55G) 1 CUSHION (SX5A) UPPER (EX55P) 1 CUSHION (SX5A) LOWER (EX55P)	
* 5 6 SP1	1-589-815-11	CABINET (R) ASSY, SPEAKER MOUNTED PC BOARD(NET WORK) SPEAKER (2cm)		*		1 INDIVIDUAL CARTON(EX55G)	וע דען נדי/
SP2 SP2	1-504-836-21	SPEAKER (5cm) (EX55G) SPEAKER (5cm) (EX55P)		*	4-982-445-0	(E, MY, SP, H 1 INDIVIDUAL CARTON(EX55G)(US, C	
SP3	1-505-256-11	SPEAKER (16cm)					

ST-M9

SERVICE MANUAL

US Model Canadian Model E Model Tourist Model



ST-M9 is the tuner section in DHC-MD7.

SPECIFICATIONS

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range

U.S. and Canadian models:

87.5 - 108.0 MHz

(100 kHz step)

Tourist model:

76.0 - 108.0 MHz

(50 kHz step)

Other models:

87.5 - 108.0 MHz

(50 kHz step)

Antenna FM lead antenna Antenna terminals 75 ohm unbalanced

Intermediate frequency

10.7 MHz

AM tuner section

Tuning range

U.S. and Canadian models:

531 - 1,710 kHz (with the tuning interval set at 9 kHz) 530 - 1,710 kHz

(with the tuning interval set at 10 kHz)

Other models:

531 - 1,602 kHz (with the tuning interval set at 9 kHz) 530 - 1,710 kHz

(with the tuning interval set at 10 kHz)

AM loop antenna, Antenna External antenna

terminals

Intermediate frequency

450 kHz

(3 lb 4 oz)

Dimensions

Approx. 280 x 82.5 x 290 mm $(111/8 \times 31/4 \times 111/2 \text{ in}) (w/h/d)$ incl. projecting parts and controls Approx. 1.5 kg

Mass

Design and specifications are subject to change without notice.





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SAFETY CHECK-OUT

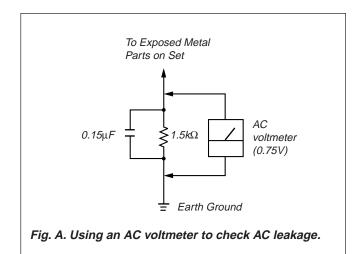
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

- A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
- 2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
- 3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



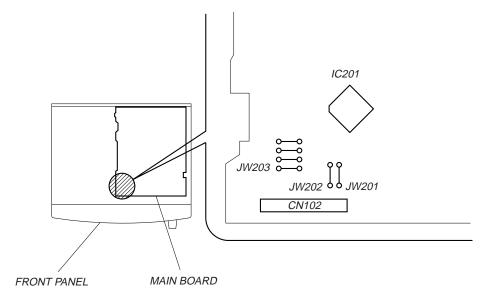
SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MODEL IDENTIFICATION — MAIN BOARD —



	US, Canadian model	Tourist model	Hong Kong, Singapore model
JW201	Mount	Mount	No Mount
JW202	No Mount	No Mount	Mount
JW203	Mount	No Mount	Mount

SECTION 1 SERVICING NOTE

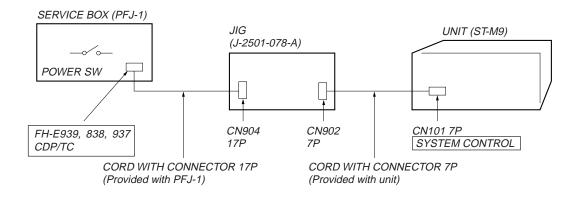
Power Supply During Servicing

This unit is not able to operate on its own because it does not have its own power supply. During servicing, connect to other units. Power is supplied when the <u>SYSTEM POWER</u> button of the amplifier (TA-M7) is turned ON.

If the other units are not available, use a service box (PFJ-1) and jig (J-2501-078-A).

In this case, press the **ENTER/NEXT** button, **SLEEP** button simultaneously to turn on the power.

[Connection Diagram]



KEY/Fluorescent indicator tube/LED Check Mode

To enter KEY/Fluorescent indicator tube/LED check mode, press the <u>ENTER/NEXT</u> and <u>REC</u> buttons at the same time. Under mode, every time when press any key or turn <u>MULTI CONTROLLER</u> knob, change to next situation.

- ① All LED indicators light on
- 2 All Fluorescent indicator tube indicators light on
- 3 A part of Fluorescent indicator tube light on mode 1. (Indicated ST-SEG)
- 4 A part of Fluorescent indicator tube light on mode 2. (Indicated RDS-SEG)
- (5) KEY check mode

NOTE:

- 1) All LED light on mode is keeped, when buttons which is pressed to enter all LED light on mode, release same time. When release them separate timing, it is moved to next All LED light on mode.
- 2) After all LED light on mode, light on point remove one by one, when any button pressed or MULTI CONTROLLER knob turned.
- 3) Under KEY check mode, every time buttons pressed numerical value of "KEY" in Fluorescent indicator tube increse.

 And that time, numerical value of "ECDR" increse when MULTI CONTROLLER button turn to + direction, and it decrese turn to direction.

When you want to finish this mode, unplug the power of amplifier or turn off PFJ-1 of POWER switch.

Switching the Channel Step 9 kHz/10 kHz

- 1. Turn off the power of the unit.
- 2. While pressing the ENTER/NEXT button, press the SYSTEM POWER button of the amplifier section to turn on the power.

The value switches between 9 kHz and 10 kHz steps each time the above is carried out.

NOTE:

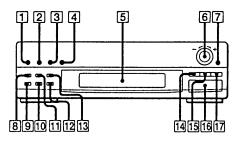
- 1) Take note not to switch the above when not required.
- 2) This switching cannot be performed when power is supplied using service box (PFJ-1).

SECTION 2 GENERAL

Index to Parts and Controls

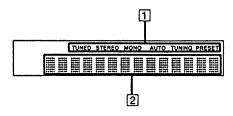
Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

Front Panel



- 1 ONCE button* (26)
- 2 DAILY button* (26)
- 3 REC button* (26, 27)
- 4 SLEEP button* (25)
- 5 Display window (6, 22, 25)
- 6 MULTI CONTROLLER* (6, 16, 22, 23, 26)
- 7 ENTER/NEXT button* (6, 22, 23, 26)
- 8 CHARACTER button (23)
- 9 MEMORY button (23)
- 10 STEREO/MONO button (22)
- 11 TIMER SET button (25)
- 12 DISPLAY button (23)
- 13 CLOCK SET button (6)
- 14 MANUAL button (16, 22)
- 15 AUTO button (16, 22)
- 16 TUNER/BAND button (16, 22, 33)
- 17 PRESET button (16, 23)

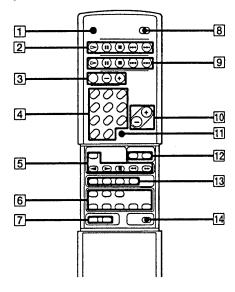
Display Window



- 1 Tuner indication (22)
- 2 Frequency/station name/time/timer indication (6, 22, 23, 25)

Remote

For further operation, refer to the pages in parentheses.



- 1 SLEEP button (25)
- 2 MD operating buttons
 - (play) (11)
 - II (pause) (11)
 - **(stop)** (11)
 - I◄◄ / ▶► I (AMS**) (11)
- 3 Tuner operating buttons (22) BAND button
 - PRESET (+/-) buttons
- 4 CD/Tuner/MD numeric buttons (8, 12, 23)
- Tape operating buttons TAPE button
 - (reverse side play)
 - (front side play)
 - (stop)
 - ◄ (fast leftward)
 - ►► (fast rightward)
- 6 CD operating buttons CD button (8)

REPEAT button (10)

TIME button (7)

DISC 1 – 3 buttons (7)

CHECK button (9)

CLEAR button (9)

7 TUNER button

DISPLAY button (23)

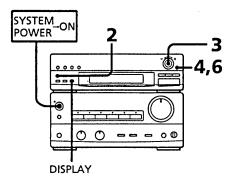
This section is extracted from instruction manual.

- 8 SYSTEM POWER switch (7)
- 9 CD operating buttons
 - (play) (7)
 - **II** (pause) (7) **■** (stop) (7)
 - H◀ /►► (AMS**) (8)
- 10 VOLUME (+/-) buttons (7, 11, 24, 27)
- 11 MUTING button (24)
- 12 VIDEO 1 button (28)
- VIDEO 2 button (28)
 13 MD operating buttons
 - REPEAT button (13)
 DISPLAY button (12)
 - SCROLL button (21)
- 14 SOURCE DIRECT button (24)
- ** AMS: Automatic Music Sensor

Assigning a Name for a Preset Station (station name)

You can assign a name of up to eight characters for each preset station. The station name appears in the display when all of the following conditions are met:

- You are tuning in a preset station.
- You have already assigned a name for that station.
- You have changed the frequency display to the station name display.



- 1 Tune in the preset station you would like to assign a name.
- **2** Press CHARACTER.

 The MULTI CONTROLLER indicator, the ENTER/NEXT indicator, and the cursor (located at the first character) flash.
- **3** Turn MULTI CONTROLLER to select the character.
- 4 Press ENTER/NEXT.
- **5** Repeat steps 3 and 4 above to enter the next character.
- **6** Press ENTER/NEXT repeatedly when you finish entering the name. The cursor moves to the right and disappears; the name is now memorized.

You can use these letters and symbols

To erase the station name

You can erase the station name by changing all the characters of that name into "spaces".

Use the buttons on the unit to do this operation.

To change the frequency display to the station name display

Each time you press DISPLAY, the frequency or station name (if you have stored any) appears in the display repeatedly.

SECTION 3 ELECTRICAL ADJUSTMENT

0DB=1μ**V**

Note: As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

AM SECTION

AM Tuned Level Adjustment

Note: FM Tuned Level adjustment should be performed after this AM Tuned Level Adjustment.

Setting: Band: AM Procedure: $loop \ antenna$ $Supplied \ accessories$ AM $RF \ SSG$ $AM \ RF \ SSG$ $AM \ antenna$ $AM \$

Modulation: 999 kHz (at 9 kHz step)

1,050 kHz (at 10 kHz step)

output level: 55 dB

400Hz signal

 Set the output of SSG so that the input level of the set becomes 55 dB.

2. Tune the set to 999 kHz or 1,000 kHz.

3. Adjust RV1 to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location: MAIN board

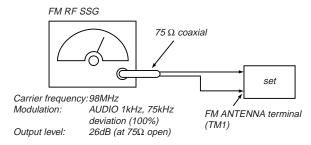
FM SECTION

FM Tuned Level Adjustment

Note: This adjustment should be performed after the AM Tuned Level Adjustment.

Setting: Band: FM Procedure:

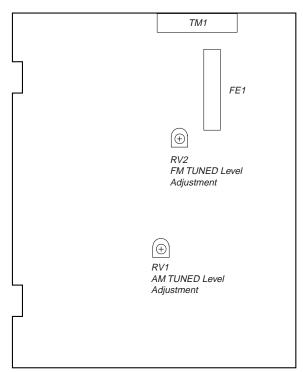
1. Supply a 26 dB 98 MHz signal from the ANTENNA terminal.



- 2. Tune the set to 98 MHz.
- Adjust RV2 to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location: MAIN board

Adjustment Location [MAIN BOARD] – Component Side –



SECTION 4 DIAGRAMS

4-1. IC PIN FUNCTION

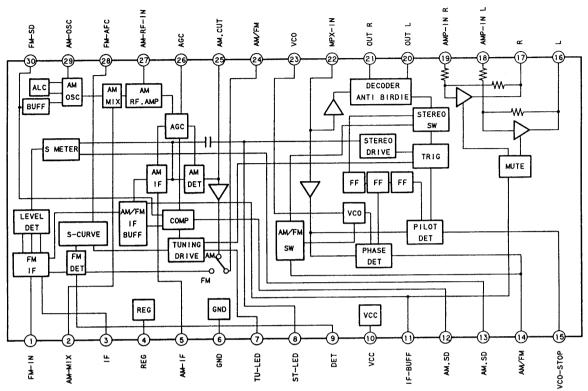
• IC201 SYSTEM CONTROL (µPD78013GC-652-AB8)

Pin No.	Pin Name	I/O	Function
1	DESTINATION	I	
2	DESTINATION	I	Destination selection input.
3	DESTINATION	I	Destination selection input.
4	DESTINATION	I	
5	IF +50	I	Not used. (Ground)
6	IF -50	О	Not used. (Ground)
7	BACK UP	I	Back up mode input.
8	NC	_	Not used. (Open)
9	Vss	_	Ground
10	POWER	О	Power ON/OFF control.
11	MUTE	О	Mute output.
12	ANALOG BUS	_	
13	NC	_	
14	NC	_	Not used. (Open)
15	AM MONO	_	Not used. (Open)
16	AM/FM	_	
17	IFNG	_	
18	STEREO	I	STEREO signal detection input.
19	SIGNAL	I	TUNED signal detection input.
20	DATA IN	I	Data input. (LC72130, PLL)
21	DATA OUT	О	Data output. (LC72130, PLL)
22	CLOCK	О	Clock output. (LC72130, PLL)
23	CE	О	Chip Enable output. (LC72130, PLL)
24	Vss	_	Ground
25	NC	_	Not used. (Open)
26	NC	_	Trot used. (Open)
27	ONCE	О	
28	DAILY	0	
29	REC	О	LED drive output.
30	SLEEP	О	LLD arre surput.
31	ENCODER	О	
32	NEXT	О	
33	ENCODER IN B	I	ENCODER input. (B)
34	AU BUS OUT	О	Audio bus output.
35	RESET	I	SYSTEM RESET input.
36	AU BUS IN	I	Audio bus input.
37	ENCODER IN A	I	ENCODER input. (A)
38	RDS-CLOCK	I	RDS clock input. (Not used) (Ground)
39	RDS-DATA	I	RDS data input. (Not used) (Ground)
40	Vdd		Power supply 5V.

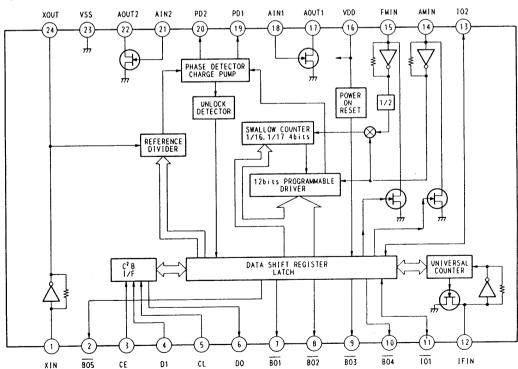
Pin No.	Pin Name	I/O	Function
41	X2	О	System main clock. (10 MHz)
42	X1	I	System main clock. (10 Mriz)
43	GND	_	Ground
44	XT2	О	System sub clock. (32.768 kHz)
45	XT1	I	System sub clock. (32.706 kHz)
46	GND	_	Ground
47	KEY IN K1	I	
48	KEY IN K2	I	Key input. (Analog)
49	KEY IN	I	
50	GND	_	
51	GND	_	
52	GND	_	Ground
53	GND	_	
54	GND	_	
55	AVDD	_	Analog power supply +5V.
56	AVREF		Analog system reference voltage input.
57	GND		Ground
58	SDATA	О	Fluorescent indicator tube data output. (IC601)
59	SCK	О	Fluorescent indicator tube clock output. (IC601)
60	CS	О	Fluorescent indicator tube chip select signal output. (IC601)
61	RESET	О	Fluorescent indicator tube reset signal output. (IC601)
62	ERRORS	I	
63	CORRECTION	О	Note used. (Open)
64	RECEIVED	О	

4-2. IC BLOCK DIAGRAMS -- MAIN SECTION --

IC1 LA1835



IC51 LC72130



D2 D103 D104 D105

D111

D112 D113 D121

D122 D123 D124 D125 D126 D127 D141 D142

D143 D161 D191 D271

D281

D282

IC1 IC51 IC111 IC171 IC201

Q1 Q2 Q9 Q10 Q55 Q121 Q122 Q123 Q141 Q142 Q201 Q271 Q272 Q281

4-3. PRINTED WIRING BOARD — MAIN SECTION —

• • component side.

: Parts mounted on the conductor side.

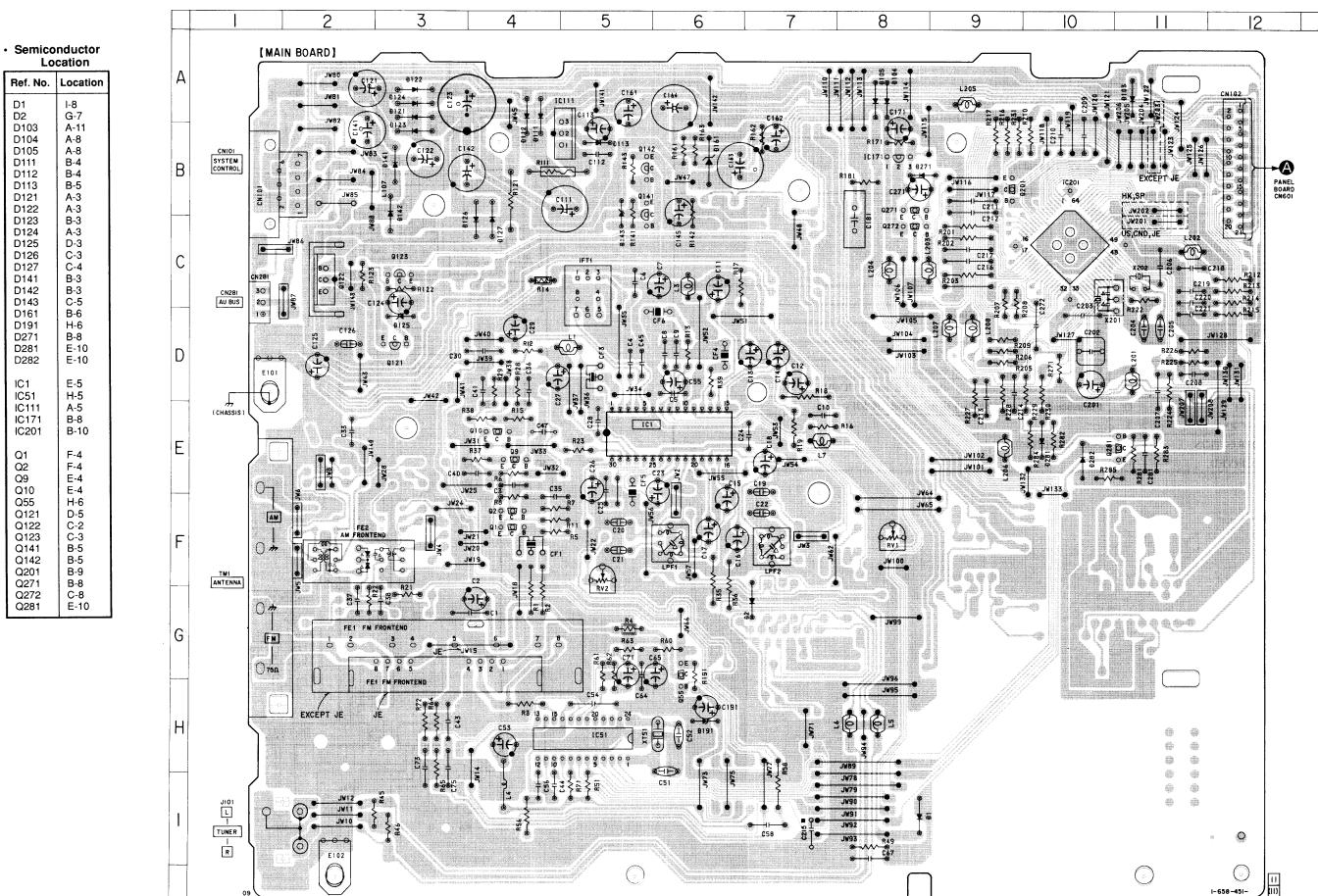
Δ : internal component.

: Pattern from the side which enable seeing.

CND: Canadian model. : Hong Kong model. : Singapore model.

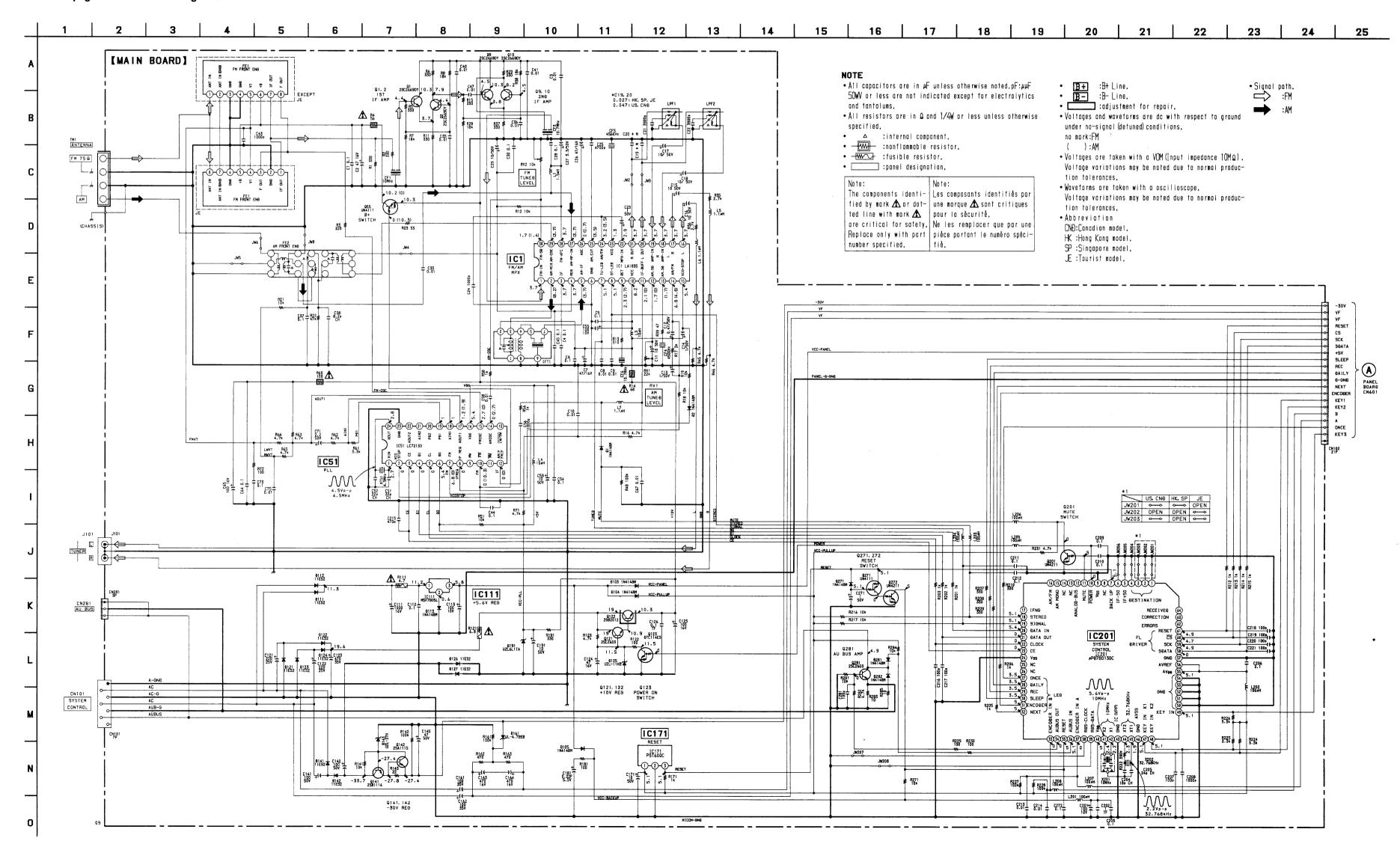
JΕ : Tourist model.

Abbreviation

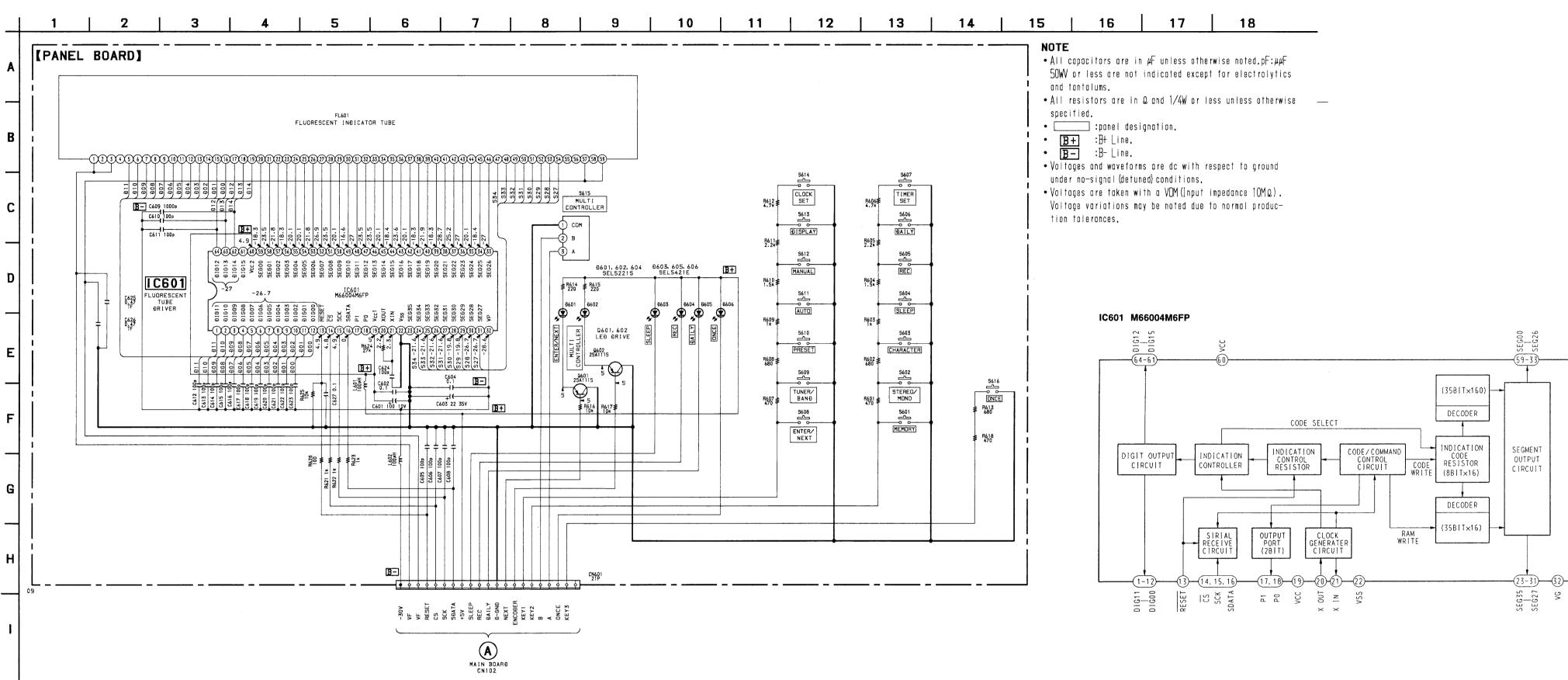


4-4. SCHEMATIC DIAGRAM — MAIN SECTION —

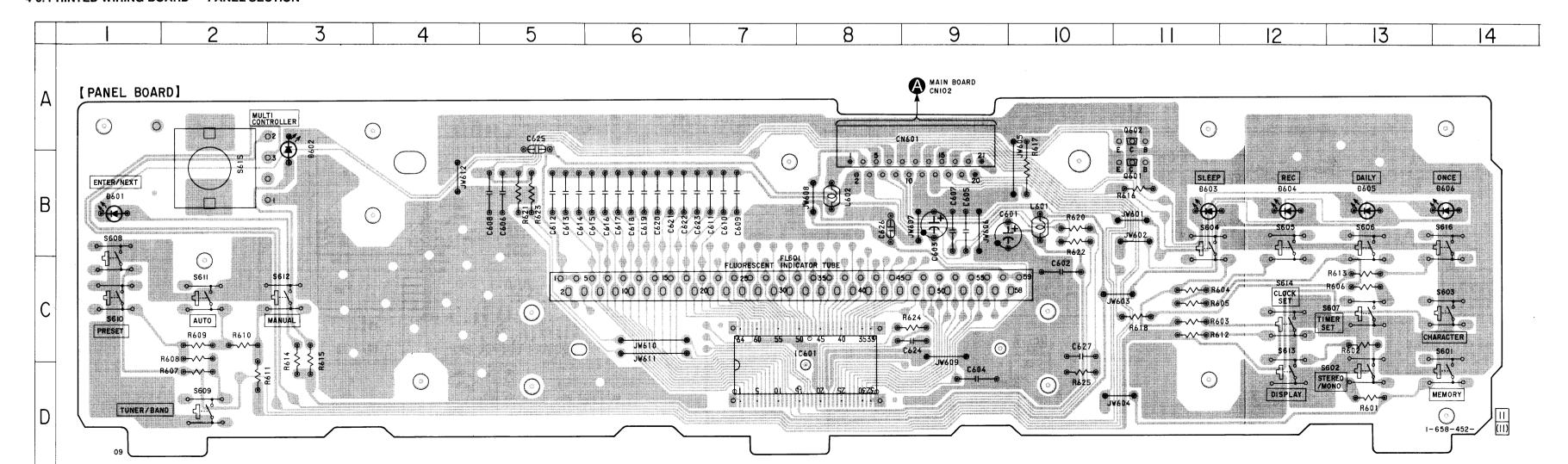
- See page 8 for IC Pin Function. (IC201)
- See page 10 for IC Block Diagrams.



4-5. SCHEMATIC DIAGRAM — PANEL SECTION —



4-6. PRINTED WIRING BOARD — PANEL SECTION —



Semiconductor Location

Ref. No.	Location
D601 D602 D603 D604 D605 D606	B-1 A-3 B-11 B-12 B-13 B-14
IC601	C-8
Q601 Q602	B-11 A-11

- • : parts extracted from the component side.
- Pattern from the side which enable seeing.

SECTION 5 EXPLODED VIEW

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

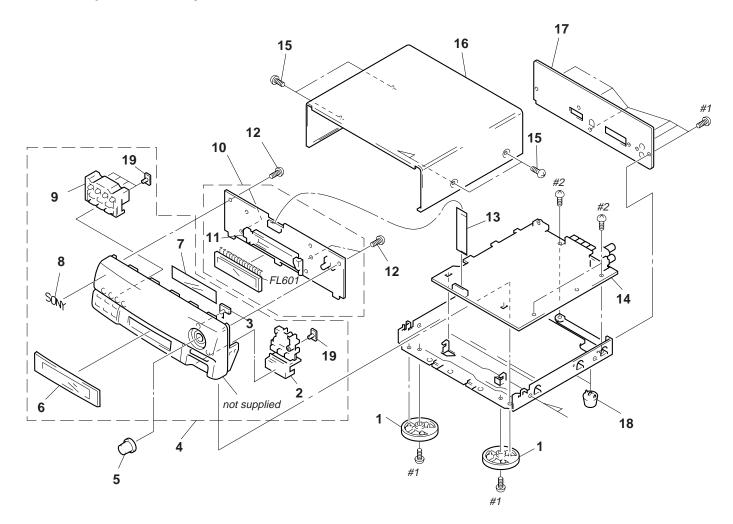
• Abbreviation

CND : Canadian model

JE : Tourist model

HK : Hong Kong model

SP : Singapore model



Ref. No.	Part No.	Description	<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>
1	4-977-699-11	LEG (F)		12	4-951-620-01	SCREW (2.6X8), +BVTP	
2	4-977-704-21	BUTTON (BAND)		13	1-773-144-11	WIRE (FLAT TYPE) (21 CORE)	
3	4-977-705-11	INDICATOR (JOG)		* 14	A-4390-220-A	MAIN BOARD, COMPLETE (HK,SP)	
4	X-4947-361-1	PANEL ASSY, FRONT					
5	4-977-680-01	KNOB (JOG)		* 14	A-4390-222-A	MAIN BOARD, COMPLETE (JE)	
				* 14	A-4390-223-A	MAIN BOARD, COMPLETE (US,CND)	
6	X-4947-495-1	WINDOW (FL) ASSY		15	3-363-099-01	SCREW (CASE 3 TP2)	
7	4-979-353-11	FILTER (MD)		* 16	4-970-927-41	CASE	
8	4-962-708-01	EMBLEM (4-A), SONY		* 17	4-977-706-11	PANEL, BACK	
9	4-977-703-11	BUTTON (TIMER)					
* 10	A-4390-221-A	PANEL BOARD, COMPLETE (JE,HK,SP))	18	4-965-822-01	FOOT	
				19	4-977-674-11	INDICATOR (ENTER)	
* 10	A-4390-224-A	PANEL BOARD, COMPLETE (US,CND)		FL60	1-517-368-11	INDICATOR TUBE, FLUORESCENT	
* 11	4-970-787-11	HOLDER (FL)					



SECTION 6 ELECTRICAL PARTS LIST

Note:

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque \(\Delta \) sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
 All resistors are in ohms
 METAL: Metal-film resistor
 METAL OXIDE: Metal Oxide-film resistor

F : nonflammable

- SEMICONDUCTORS
 In each case, u: μ, for example:
 uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
 uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS uF: μF
- COILS uH: µH
- Abbreviation

CND : Canadian model

JE : Tourist model

HK : Hong Kong model

SP : Singapore model

Ref. No.	Part No.	Description			<u>Remark</u>	Ref. No.	Part No.	Description			Remark
*	V 4300 330 V	MAIN BOARD, CO	MDI ETE (HK	CD)		C28	1-164-159-11	CERAMIC	0.1uF		50V
	A-4370-220-A	*******	`	. ,		C20	1-126-964-11		10uF	20%	50V
						C29	1-164-159-11		0.1uF	2070	50V
*	V 4500 555 V	MAIN BOARD, CO	MDI ETE / IE'	`		C30	1-104-139-11	CLRAIVIIC	U. Tul		30 V
	A-4370-222-A	*******	` '			C33	1-162-306-11	CEDAMIC	0.01uF	30%	16V
						C35	1-162-306-11		0.01uF	30%	16V
*	V 4500 555 V	MAIN BOARD, CO	MIDLETE (LIS	CND)		C36	1-162-306-11		0.01uF	30%	16V
	A-4370-223-A	*********	`	. ,		C30	1-164-159-11		0.01ul	30 /0	50V
						C37	1-162-198-31		8.2PF	10%	50V
*	4-941-237-11	HEAT SINK				030	1-102-170-31	CLIVAIVIIC	0.211	1070	J0 V
		SCREW +BVTP 3)	/Ω TVDF2 NI G	2		C40	1-162-306-11	CEDAMIC	0.01uF	30%	16V
	7-003-040-77	JCKEW IDVII 3/	(O I II LZ IV-	,		C40	1-162-306-11		0.01uF	30%	16V
		< CAPACITOR >				C43	1-162-294-31		0.001uF	10%	50V
		CALACITOR >				C43	1-164-159-11		0.00 Tul	1070	50V
C1	1-164-159-11	CERAMIC	0.1uF		50V	C45	1-164-159-11		0.1uF		50V
C2	1-126-967-11		47uF	20%	16V	043	1 104 137 11	OLIVIIVIIO	o. rui		30 V
C3	1-162-306-11		0.01uF	30%	16V	C47	1-164-095-11	CERAMIC	0.01uF	10%	16V
C4	1-164-159-11		0.1uF	0070	50V	C51	1-102-518-11		33PF	5%	50V
C5	1-164-159-11		0.1uF		50V	C52	1-102-959-00		22PF	5%	50V
00	1 101 107 11	OLIU IIVII O	0.141		001	C53	1-126-964-11		10uF	20%	50V
C6	1-164-159-11	CERAMIC	0.1uF		50V	C54	1-164-159-11		0.1uF	2070	50V
C7	1-126-967-11		47uF	20%	16V	001	1 101 107 11	OLIV WIIIO	0.101		001
C8	1-162-306-11		0.01uF	30%	16V	C55	1-126-933-11	FLECT	100uF	20%	10V
C9	1-162-306-11		0.01uF	30%	16V	C56	1-162-294-31		0.001uF	10%	50V
C10	1-162-306-11		0.01uF	30%	16V	C58	1-162-306-11		0.001uF	30%	16V
010	1 102 000 11	OLIU IIVII O	0.0141	0070	101	C64	1-164-159-11		0.1uF	0070	50V
C11	1-126-964-11	FLECT	10uF	20%	50V	C65	1-126-933-11		100uF	20%	16V
C12	1-124-902-00		0.47uF	20%	50V		20 ,00		.004.	2070	
C13	1-124-903-11		1uF	20%	50V	C67	1-162-306-11	CFRAMIC	0.01uF	30%	16V
C14	1-124-903-11		1uF	20%	50V	C71	1-124-925-11		2.2uF	20%	100V
C15	1-126-964-11		10uF	20%	50V	C73	1-164-159-11		0.1uF		50V
						C75	1-162-306-11		0.01uF	30%	16V
C16	1-126-964-11	ELECT	10uF	20%	50V	C111	1-126-952-11		1000uF	20%	16V
C17	1-126-964-11	ELECT	10uF	20%	50V						
C18	1-126-964-11	ELECT	10uF	20%	50V	C112	1-164-159-11	CERAMIC	0.1uF		50V
C19	1-136-161-00	FILM	0.047uF	5%	50V	C113	1-126-933-11	ELECT	100uF	20%	10V
					(US,CND)	C121	1-104-666-11	ELECT	220uF	20%	25V
C19	1-136-158-00	FILM	0.027uF	5%	50V	C122	1-104-666-11	ELECT	220uF	20%	25V
					(JE,HK,SP)	C123	1-126-951-11	ELECT	470uF	20%	35V
C20	1-136-161-00	FILM	0.047uF	5%	50V						
					(US,CND)	C124	1-126-967-11	ELECT	47uF	20%	16V
C20	1-136-158-00	FILM	0.027uF	5%	50V	C125	1-126-933-11	ELECT	100uF	20%	16V
					(JE,HK,SP)	C126	1-136-165-00	FILM	0.1uF	5%	50V
C21	1-137-436-11	FILM	0.0039uF	5%	50V	C141	1-126-968-11	ELECT	100uF	20%	50V
C22	1-137-436-11	FILM	0.0039uF	5%	50V	C142	1-126-968-11	ELECT	100uF	20%	50V
C23	1-124-903-11	ELECT	1uF	20%	50V						
C24	1-162-294-31	CERAMIC	0.001uF	10%	50V	C145	1-126-967-11	ELECT	47uF	20%	50V
C25	1-162-600-11	CERAMIC	0.0047uF	30%	16V	C161	1-126-948-11	ELECT	100uF	20%	35V
						C162	1-126-948-11	ELECT	100uF	20%	35V
C26	1-126-967-11	ELECT	47uF	20%	16V	C163	1-126-935-11	ELECT	470uF	20%	16V
C27	1-126-962-11	ELECT	3.3uF	20%	50V	C164	1-126-935-11	ELECT	470uF	20%	16V
						•					

MAIN

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description	<u>Remark</u>
C171	1-126-964-11	FLECT	10uF	20%	50V	D124	8-719-200-82	DIODE 11ES2	
C181	1-125-705-11		0.22F	0	5.5V	D125		DIODE UZL-11H3	
C191	1-126-964-11		10uF	20%	5.5 V	D126		DIODE 11ES2	
C201	1-126-933-11		100uF	20%	10V	D120		DIODE 11ES2	
C201	1-136-177-00		1uF	5%	50V	D127	0-717-200-02	DIODE TIESZ	
C202	1-130-177-00	FILIVI	TUF	376	307	D1//1	0 710 200 02	DIODE 11ES2	
C203	1-164-159-11	CEDAMIC	0.1uF		50V	D141 D142		DIODE 11ES2	
			18PF	F0/	50V 50V				
C204	1-102-953-00			5%		D143		DIODE UZL-27H	
C205	1-102-960-00		24PF	5%	50V	D161		DIODE UZ-4.7BSB	
C206	1-164-159-11		0.1uF	100/	50V	D191	8-719-933-33	DIODE HZS6A1L	
C207	1-162-282-31	CERAIVIIC	100PF	10%	50V	5074	0.740.007.40	DIODE ANIMATONA	
2000	4 4 4 0 00 4 04	OFDANNO	0.004 5	400/	501/	D271		DIODE 1N4148M	
C208	1-162-294-31		0.001uF	10%	50V	D281		DIODE 1N4148M	
C209	1-164-159-11		0.1uF		50V	D282	8-719-987-63	DIODE 1N4148M	
C210	1-164-159-11		0.1uF		50V			0001110 7501 11111	
C211	1-164-159-11		0.1uF		50V			< GROUND TERMINAL >	
C212	1-164-159-11	CERAMIC	0.1uF		50V				
						E101		TERMINAL BOARD, GROUND	
C213	1-162-306-11		0.01uF	30%	16V	E102	1-537-770-21	TERMINAL BOARD, GROUND	
C214	1-162-306-11	CERAMIC	0.01uF	30%	16V				
C215	1-162-290-31		470PF	10%	50V			< FRONT END >	
C216	1-162-282-31	CERAMIC	100PF	10%	50V				
C217	1-162-282-31	CERAMIC	100PF	10%	50V	FE1	1-465-673-11	FRONT END (2 BAND) (US,CND,HK,SI	P)
						FE1	1-693-251-11	FRONT END (JE)	
C218	1-162-282-31	CERAMIC	100PF	10%	50V	FE2	1-239-634-11	ENCAPSULATED COMPONENT, AM.RI	F
C219	1-162-282-31	CERAMIC	100PF	10%	50V				
C220	1-162-282-31	CERAMIC	100PF	10%	50V			< IC >	
C221	1-162-282-31	CERAMIC	100PF	10%	50V				
C271	1-124-903-11	ELECT	1uF	20%	50V	IC1	8-759-176-03	IC LA1835	
						IC51	8-759-288-54	IC LC72130	
C272	1-164-159-11	CERAMIC	0.1uF		50V	IC111	8-759-231-53	IC TA7805S	
C281	1-162-282-31		100PF	10%	50V	IC171		IC PST600C-T	
						IC201		IC uPD78013GC-652-AB8	
		< FILTER >				.020.	0 707 000 01		
								< IFT >	
CF1	1-567-389-11	FILTER, CERAMIC	(10.7MHz)						
CF3		FILTER, CERAMIC	` '			IFT1	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)	
CF4		FILTER, CERAMIC	` '						
CF5		OSCILLATOR, CER		Hz)				< JACK >	
CF6		FILTER, CERAMIC		/					
0.0	. 700 220		(1017111112)			J101	1-770-272-11	JACK, PIN 2P (TUNER)	
		< CONNECTOR >				3101	1 770 272 11	37.610, 1 117.21 (1.617.217)	
		COOMINEOTORY						< COIL >	
CN101	1-770-158-21	HOUSING, CONNE	CTOR 7P (S)	YSTFM	CONTROL)			(0012)	
CN102		SOCKET, CONNECT	•		001111102)	L1	1-410-688-31	INDUCTOR 1.5mH	
* CN281		PIN, CONNECTOR)		L3		INDUCTOR 10uH	
014201	1 000 001 11	T IIV, GOTTIVE GTOT	01 (110 000)	,		L4		INDUCTOR 10uH	
		< DIODE >				L5		FERRITE BEAD INDUCTOR	
		(DIODE)				L6		FERRITE BEAD INDUCTOR	
D1	8-719-987-63	DIODE 1N4148M					1 110 077 21	TERRITE BEAD INDOOTOR	
D2		DIODE 1N4148M				L7	1_/110_307_21	FERRITE BEAD INDUCTOR	
D103		DIODE 1N4148M				L201		INDUCTOR 100uH	
D103		DIODE 1N4148M				L201		INDUCTOR 100uH	
D104		DIODE 1N4148M				L202		INDUCTOR 100uH	
טוט	0-117-701-03	PIODE IIN4140IVI				L203		INDUCTOR 100uH	
D111	8 ₋ 710 200 02	DIODE 11ES2				L204	1-410-971-11	INDUCTOR TOURT	
D111		DIODE 11ES2				L205	1 /10 521 11	INDUCTOR 100uH	
D112 D113		DIODE TTES2 DIODE 1N4148M				L205 L206		INDUCTOR 100uH	
D113 D121		DIODE 1148W				L206		INDUCTOR 100uH	
D122	0-719-200-82	DIODE 11ES2				L208	1-410-521-11	INDUCTOR 100uH	
D123	0 710 200 02	DIODE 11ES2							
D123	0-119-200-82	אטטוע 11E3Z							

MAIN

Ref. No.	Part No.	<u>Description</u>			Remark		Ref. No.	Part No.	<u>Description</u>			Remark	
		< FILTER >					R51		CARBON	10K	5%	1/4W	
							R56	1-249-417-11	CARBON	1K	5%	1/4W	F
LPF1	1-239-597-11	FILTER, LOW I					R58	1-249-417-11	CARBON	1K	5%	1/4W	
LPF2	1-239-597-11	FILTER, LOW I	PASS				 ∆ R60	1-249-405-11	CARBON	100	5%	1/4W	
		< TRANSISTO	R >				R61	1-249-423-11	CARBON	3.3K	5%	1/4W	F
							R62	1-249-425-11	CARBON	4.7K	5%	1/4W	F
Q1	8-729-230-99	TRANSISTOR	2SC2669-0Y				R63	1-249-425-11	CARBON	4.7K	5%	1/4W	F
Q2		TRANSISTOR					R64	1-249-425-11	CARBON	4.7K	5%	1/4W	
Q9		TRANSISTOR					R65	1-249-425-11	CARBON	4.7K	5%	1/4W	F
Q10 Q55		TRANSISTOR TRANSISTOR					R71	1-249-425-11	CARBON	4.7K	5%	1/4W	F
							R72	1-247-807-31	CARBON	100	5%	1/4W	
Q121	8-729-620-05	TRANSISTOR	2SC2603-EF				 ⚠ R111	1-217-641-00	FUSIBLE	4.7	5%	1/4W	F
Q122	8-729-209-15	TRANSISTOR	2SD2012				 ⚠ R121	1-217-642-91	FUSIBLE	6.8	5%	1/4W	F
Q123	8-729-900-80	TRANSISTOR	DTC114ES				R122	1-247-807-31	CARBON	100	5%	1/4W	
Q141		TRANSISTOR					R123	1-249-425-11	CARBON	4.7K	5%	1/4W	F
Q142	8-729-119-76	TRANSISTOR	2SA1175-HFE				R141	1-249-429-11	CADRON	10K	5%	1/4W	
Q201	8-729-900-80	TRANSISTOR	DTC11/IES				R141	1-249-441-11		10K	5%	1/4W	
Q201 Q271		TRANSISTOR					R143	1-249-397-11		22	5%	1/4W	Е
Q271 Q272		TRANSISTOR					R161	1-249-441-11		100K	5%	1/4W	1
Q272 Q281		TRANSISTOR					R162	1-249-441-11		470	5%	1/4W	Е
Q261	0-729-020-03												
		< RESISTOR >					R163	1-249-413-11		470	5%	1/4W	
							R171	1-249-417-11		1K	5%	1/4W	F
R1	1-249-411-11	CARBON	330	5%	1/4W		R181	1-247-807-31	CARBON	100	5%	1/4W	
R2	1-249-411-11	CARBON	330	5%	1/4W		R191	1-249-411-11	CARBON	330	5%	1/4W	
R3	1-249-409-11	CARBON	220	5%	1/4W	F	R201	1-249-417-11	CARBON	1K	5%	1/4W	F
 ⚠ R 4	1-249-402-11	CARBON	56	5%	1/4W	F							
R5	1-249-411-11	CARBON	330	5%	1/4W		R202	1-249-417-11		1K	5%	1/4W	
							R203	1-249-417-11		1K	5%	1/4W	
R6	1-249-411-11		330	5%	1/4W		R205	1-249-417-11		1K	5%	1/4W	
R7	1-249-432-11		18K	5%	1/4W		R206	1-249-417-11	CARBON	1K	5%	1/4W	F
R8	1-249-432-11	CARBON	18K	5%	1/4W		R207	1-249-411-11	CARBON	330	5%	1/4W	
R11	1-249-411-11		330	5%	1/4W								
R12	1-249-429-11	CARBON	10K	5%	1/4W		R208	1-249-411-11		330	5%	1/4W	
							R209	1-249-411-11		330	5%	1/4W	
R13	1-249-442-11		510	5%	1/4W		R210	1-249-411-11		330	5%	1/4W	
 ≜ R14	1-249-403-11		68	5%	1/4W	F	R212	1-249-417-11		1K	5%	1/4W	
R15	1-249-411-11		330	5%	1/4W		R213	1-249-417-11	CARBON	1K	5%	1/4W	F
R16	1-249-425-11	CARBON	4.7K	5%	1/4W	F							
R17	1-247-842-11	CARBON	3K	5%	1/4W		R214	1-249-417-11		1K	5%	1/4W	
							R215	1-249-417-11		1K	5%	1/4W	F
R18	1-249-429-11		10K	5%	1/4W		R216	1-249-429-11	CARBON	10K	5%	1/4W	
R19	1-249-429-11		10K	5%	1/4W		R217	1-249-429-11		10K	5%	1/4W	
R21	1-249-429-11		10K	5%	1/4W		R222	1-247-893-11	CARBON	390K	5%	1/4W	
R22	1-249-437-11		47K	5%	1/4W	_	D004	1 040 400 44	CADDON	2.21/	E0/	1/4\4/	_
R23	1-249-399-11	CARBON	33	5%	1/4W	ŀ	R224			3.3K	5%	1/4W	
500		0.1.00.011	1011	=0.			R225	1-249-423-11		3.3K	5%	1/4W	
R28	1-249-432-11		18K	5%	1/4W		R226	1-249-423-11		3.3K	5%	1/4W	ŀ
R29	1-249-411-11		330	5%	1/4W	_	R227	1-249-441-11		100K	5%	1/4W	
R35	1-249-422-11		2.7K	5%	1/4W		R228	1-249-441-11	CAKRON	100K	5%	1/4W	
R36	1-249-422-11		2.7K	5%	1/4W	F	Docc	4 047 007 01	CADDON	100	E0/	41000	
R37	1-249-411-11	CARBON	330	5%	1/4W		R229	1-247-807-31		100	5%	1/4W	
500	4 0 4 5 4 5 5 5	0400000	4011	E0.			R230	1-247-807-31		100	5%	1/4W	_
R38	1-249-432-11		18K	5%	1/4W	_	R231	1-249-425-11		4.7K	5%	1/4W	F
R39	1-249-401-11		47	5%	1/4W		R271	1-249-429-11		10K	5%	1/4W	
R45	1-249-425-11		4.7K	5%	1/4W		R281	1-249-429-11	CARBON	10K	5%	1/4W	
R46	1-249-425-11		4.7K	5%	1/4W	ŀ	D000	1 040 405 41	CADDON	4 71/	E0/	4/414/	г
R49	1-249-441-11	CAKBON	100K	5%	1/4W		R282	1-249-425-11		4.7K	5%	1/4W	
							R283	1-249-393-11	CAKRON	10	5%	1/4W	r

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number

specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark	<u>.</u>
R284	1-249-429-11	•	10K	5%	1/4W			< CONNECTOR >				
R285	1-249-393-11		10	5%	1/4W F			COOMINECTORY				
						* CN601	1-568-864-11	SOCKET, CONNEC	CTOR 21P			
		< VARIABLE RES	ISTOR >					DIODE				
RV1	1 220 401 11	RES, ADJ, CARBO	าก วว กห					< DIODE >				
RV1		RES, ADJ, CARBO				D601	8-719-046-44	DIODE SEL5221	S (ENTER/N	EXT)		
		,,				D602		DIODE SEL5221			TROLLEF	₹)
		< TERMINAL >				D603		DIODE SEL5421		EP)		
T1.44	1 507 000 01	TEDMINIAL DOAD	D (ANITENIAL	• >		D604		DIODE SEL5221		111/		
TM1	1-53/-238-21	TERMINAL BOAR	D (ANTENNA	4)		D605	8-719-046-43	DIODE SEL5421	IE-TPT5 (DAI	LY)		
		< VIBRATOR >				D606	8-719-046-43	DIODE SEL5421	E-TP15 (ON	CE)		
									•	,		
X201		VIBRATOR, CERA	`	,				< FLUORESCENT	INDICATOR	>		
X202 XT51		VIBRATOR, CRYS	•	•		FL601	1 517 260 11	INDICATOR TUBE	ELLIODESC	ENIT		
VIOL	1-700-549-11	VIDRATOR, CRTS	TAL (4.5IVIII	۷)		1 L001	1-517-300-11	INDICATOR TOBL	_, I LUUKLSC	LINI		
******	**********	**********	*****	*****	*****			< IC >				
*	A-4390-221-A	PANEL BOARD, C				IC601	8-759-261-63	IC M66004M6FI	Р			
		25. 25. 25. 25. 25. 25. 25. 25. 25. 25.		1. 1. 1. 1. 1. 1. 1. 1. 1.	. 4. 4.			< COIL >				
*	A-4390-224-A	PANEL BOARD, C	OMPLETE (L	JS,CND)				(OOIL)				
		******	*******	******		L601		INDUCTOR 100				
at.	4 070 707 44	LIOLDED (EL)				L602	1-408-421-00	INDUCTOR 100	uH			
*	4-970-787-11	HOLDER (FL)						< TRANSISTOR >				
		< CAPACITOR >						\ 110.00010101010				
						Q601		TRANSISTOR 2				
C601	1-126-933-11		100uF	20%	10V	Q602	8-729-119-76	TRANSISTOR 2	SA1175-HFE			
C602	1-164-159-11		0.1uF	200/	50V			DECICTOR				
C603	1-104-667-11		22uF	20%	35V			< RESISTOR >				
C604 C605	1-164-159-11 1-162-282-31		0.1uF 100PF	10%	50V 50V	R601	1-249-413-11	CADDON	470	5%	1/4W	Е
C003	1-102-202-31	CERAIVIIC	TOUPF	10%	307	R602	1-249-415-11		680	5%	1/4W	
C606	1-162-282-31	CERAMIC	100PF	10%	50V	R603	1-249-417-11		1K	5%	1/4W	
C607	1-162-282-31		100PF	10%	50V	R604	1-249-419-11		1.5K	5%	1/4W	
C608	1-162-282-31		100FF	10%	50V	R605	1-249-421-11		2.2K	5%	1/4W	
C609	1-162-294-31		0.001uF	10%	50V	1 1003	1-247-421-11	CARDON	2.2K	370	1/4 00	'
C610	1-162-282-31		100PF	10%	50V	R606	1-249-425-11	CADDON	4.7K	5%	1/4W	Е
COTO	1-102-202-31	CLRAIVIIC	100F1	1070	50 V	R607	1-249-413-11		4.7K 470	5%	1/4W	
C611	1-162-282-31	CEDAMIC	100PF	10%	50V						1/4W	
C612	1-162-282-31		100FT	10%	50V	R608	1-249-415-11 1-249-417-11		680 1K	5% 5%	1/4W	
C612			100PF			R609	1-249-417-11					
C614	1-162-282-31 1-162-282-31		100PF 100PF	10% 10%	50V 50V	R610	1-249-419-11	CARBON	1.5K	5%	1/4W	Г
C614	1-162-282-31		100PF	10%	50V 50V	D411	1-249-421-11	CADDON	2.2K	5%	1/4W	Е
C013	1-102-202-31	CERAIVIIC	TOOPF	1076	307	R611					1/4W	
0/1/	1 1/2 202 21	CEDANAIC	100DF	100/	F0\/	R612	1-249-425-11		4.7K	5%		
C616	1-162-282-31		100PF	10%	50V	R613	1-249-415-11		680	5%	1/4W	
C617	1-162-282-31		100PF	10%	50V	R614	1-249-409-11		220	5%	1/4W	
C618	1-162-282-31		100PF	10%	50V	R615	1-249-409-11	CAKBON	220	5%	1/4W	r
C619	1-162-282-31		100PF	10%	50V	D/1/	1 040 400 11	CARRON	101/	F0/	1/4\4/	
C620	1-162-282-31	CERAIVIIC	100PF	10%	50V	R616 R617	1-249-429-11 1-249-429-11		10K 10K	5% 5%	1/4W 1/4W	
C621	1-162-282-31	CERAMIC	100PF	10%	50V	R617	1-249-429-11		470	5% 5%	1/4VV 1/4W	
C621	1-162-282-31		100PF	10%	50V 50V	R620	1-247-807-31		100	5%	1/4W	
C622	1-162-282-31		100PF 100PF	10%	50V 50V	R620	1-247-807-31		100 1K	5% 5%	1/4VV 1/4W	
C623	1-162-282-31		100PF 100PF	10%	50V 50V	KOZ I	1-247-41/-11	MIDUM	IIX	5 70	1/4VV	I.
C624 C625			0.47uF	5%	50V 50V	DADO	1-249-417-11	CADRON	1K	5%	1/4W	E
0020	1-136-173-00	I ILIVI	U.4/UF	5 /0	50 v	R622 R623	1-249-417-11		1K 1K	5% 5%	1/4VV 1/4W	
C626	1-136-173-00	FII M	0.47uF	5%	50V	R623	1-249-417-11		27K	5% 5%	1/4VV 1/4W	
C627	1-130-173-00		0.47uF 0.1uF	10%	50V 50V	R625	1-249-434-11		10K	5%	1/4W	
0021	1-10 1 -137-11	OLIMINIO	o. rui	1070	JU V	1.023	1-27/-427-11	OANDON	TUIN	J /0	1/ '1 ∀ V	

ST-M9

PANEL

Ref. No.	Part No.	<u>Description</u>	Remark
		< SWITCH >	
S601	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S602	1-554-303-21	SWITCH, TACTILE (STEREO/MONO)	
S603	1-554-303-21	SWITCH, TACTILE (CHARACTER)	
S604	1-554-303-21	SWITCH, TACTILE (SLEEP)	
S605	1-554-303-21	SWITCH, TACTILE (REC)	
S606	1-554-303-21	SWITCH, TACTILE (DAILY)	
S607	1-554-303-21	SWITCH, TACTILE (TIMER SET)	
S608	1-554-303-21	SWITCH, TACTILE (ENTER/NEXT)	
S609	1-554-303-21	SWITCH, TACTILE (TUNER/BAND)	
S610	1-554-303-21	SWITCH, TACTILE (PRESET)	
S611	1-554-303-21	SWITCH, TACTILE (AUTO)	
S612	1-554-303-21	SWITCH, TACTILE (MANUAL)	
S613	1-554-303-21	SWITCH, TACTILE (DISPLAY)	
S614	1-554-303-21	SWITCH, TACTILE (CLOCK SET)	
S615	1-473-403-11	ENCODER, ROTARY (MULTI CONTRO	LLER)
S616	1-554-303-21	SWITCH, TACTILE (ONCE)	
*******	*********	**********	*****
		MISCELLANEOUS	

13	1-773-144-11	WIRE (FLAT TYPE) (21 CORE)	
FL601	1-517-368-11	INDICATOR TUBE, FLUORESCENT	
******	********	***********	******

		HARDWARE LIST	

#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	

TA-M7

SERVICE MANUAL

US Model Canadian Model E Model Tourist Model



TA-M7 is the Amplifier section in DHC-MD7.

For the U.S. model AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6 ohm loads, both channels driven, from 20 – 20,000 Hz; rated 35 watts per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 100 milliwatts to rated output.

Continuous RMS power output

U.S. model: 35 W + 35 W (6 ohms,

at 20 - 20,000 Hz, 0.9%

THD)

50 W + 50 W (6 ohms,

at 1 kHz, 5% THD)

Other models:

50 W + 50 W (6 ohms, at 1 kHz, 5% THD)

SPECIFICATIONS

Input	Jack type	Sensiti- vity	Impedance
CD	Phono	450 mV	47 kilohms
MD	Phono	450 mV	47 kilohms
TUNER	Phono	250 mV	47 kilohms
VIDEO1	Phono	250 mV	47 kilohms
VIDEO2	Phono	250 mV	47 kilohms
TAPE	Phono	250 mV	47 kilohms
MIX MIC	Phone	1 mV	10 kilohms
Output	Jack	Voltage	Impedance
			•
	Phone		
MD V/DEO1	Phono	250 mV	1 kilohm
VIDEO1	Phono Phono	250 mV 250 mV	1 kilohm 1 kilohm
	Phono	250 mV	1 kilohm

Dimensions

Approx. 280 x 122.5 x 295 mm (11 1/8 x 4 7/8 x 11 5/8 in) (w/h/d) incl. projecting parts and controls Mass Approx. 5.2 kg (11 lb 7 oz)

Design and specifications are subject to change without notice.

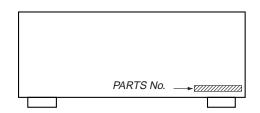




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MODEL IDENTIFICATION — BACK PANEL —



	PARTS No.
US,Canadian model	4-977-717-3□
Hong Kong model	4-977-717-0□
Singapore model	4-977-717-1□
Tourist model	4-977-717-2□

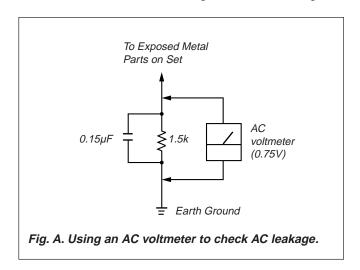
SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

- A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
- 2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
- 3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

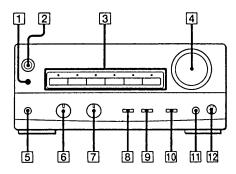
SECTION 1 GENERAL

This section is extracted from instruction manual.

Index to Parts and Controls

Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

Front Panel



- 1 Remote sensor
- SYSTEM POWER switch and ON/STANDBY indicator (7) The indicator remains lit as long as the AC power cord is connected to a wall outlet.
- 3 Function buttons* (16, 27)

VIDEO 1 (28)

VIDEO 2 (28)

TAPE (28)

MD (12, 18)

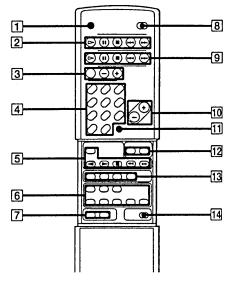
CD (8, 15)

TUNER

- 4 VOLUME control (5, 7, 11, 24, 27)
- 5 PHONES jack (24, 28)
- 6 BASS control (24)
- 7 TREBLE control (24)
- 8 SOURCE DIRECT button* (24)
- 9 MUTING button* (24)
- 10 KARAOKE PON button* (27)
- MIX MIC jack (phone jack) (27)
- 12 MIC LEVEL control (27)

Remote

For further operation, refer to the pages in parentheses.



- 1 SLEEP button (25)
- 2 MD operating buttons

!! (pause) (11)

■ (stop) (11)

H◀/►► (AMS**) (11)

3 Tuner operating buttons (22)

BAND button

PRESET (+/-) buttons

- 4 CD/Tuner/MD numeric buttons (8, 12, 23)
- Tape operating buttons
 TAPE button
 - (reverse side play)
 - ► (front side play)
 - (stop)
 - ◄ (fast leftward)
 - ►► (fast rightward)
- 6 CD operating buttons

CD button (8) REPEAT button (10)

TIME button (7)

DISC 1 – 3 buttons (7)

CHECK button (9)

CLEAR button (9)

7 TUNER button

DISPLAY button (23)

8 SYSTEM POWER switch (7)

9 CD operating buttons

11 (pause) (7)

■ (stop) (7)

H◄ / ►► (AMS**) (8)

10 VOLUME (+/-) buttons (7, 11, 24, 27)

11 MUTING button (24)

12 VIDEO 1 button (28) VIDEO 2 button (28)

MD operating buttons REPEAT button (13) DISPLAY button (12)

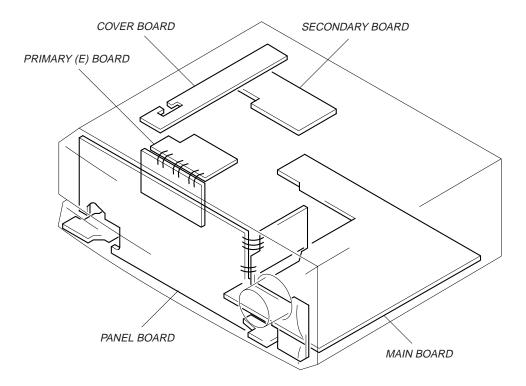
SCROLL button (21)

14 SOURCE DIRECT button (24)

** AMS: Automatic Music Sensor

SECTION 2 DIAGRAMS

2-1. CIRCUIT BOARDS LOCATION

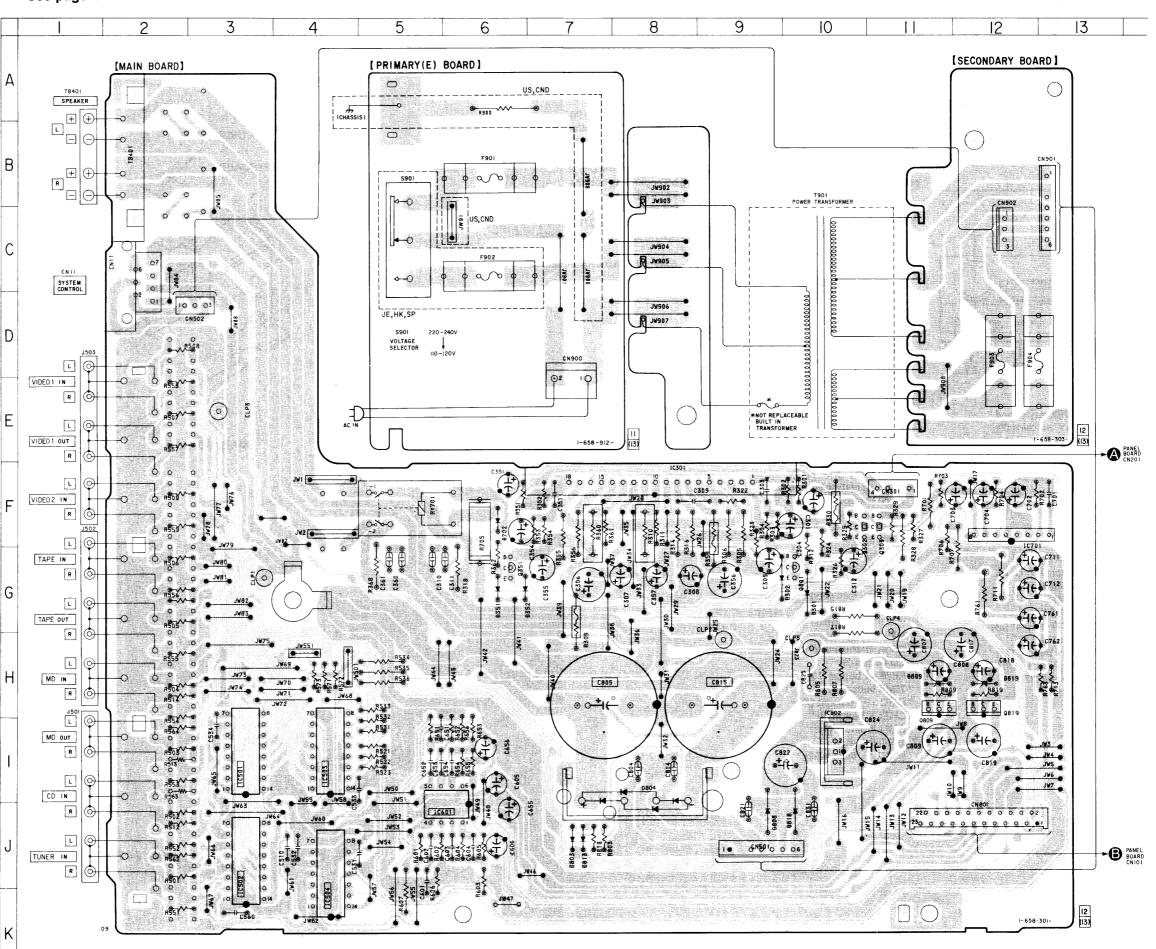


2-2. PRINTED WIRING BOARD — MAIN SECTION —

• See page 4 for Circuit Boards Location.

 Semiconductor Location

Locatio	**
Ref. No.	Location
D301	G-10
D302	G-9
D351	G-6
D352	G-6
D702	F-6
D803	J-7
D804	I-8
D808	J-9
D809	H-11
D813	J-7
D818	J-10
D819	H-12
IC301	F-8
IC501	I-3
IC502	J-3
IC503	I-4
IC504	J-4
IC601	J-6
IC701	F-12
IC802	I-10
Q301	G-10
Q302	F-10
Q303	F-11
Q351	G-6
Q809	H-11
Q819	H-12



Note:

c : parts extracted from the component side.

Pattern from the side which enable seeing.

-- 5 --

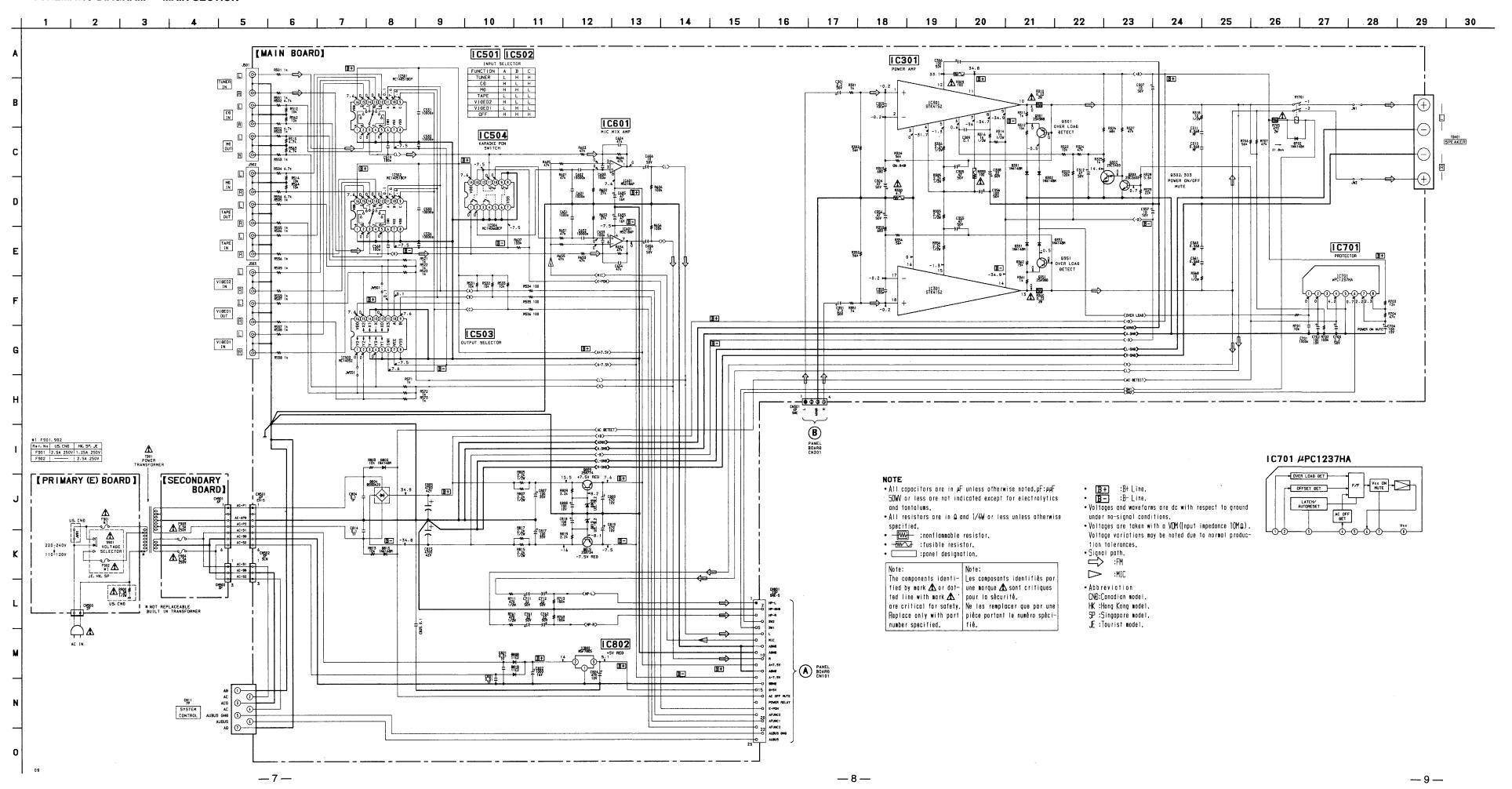
Abbreviation

CND: Canadian model.

HK: Hong Kong model.

SP: Singapore model.

JE: Tourist model.



 Semiconductor Location

Ref. No. Location

E-8 E-7

E-6 E-5 E-3 C-8 C-9 F-6 C-3

C-9

B-11

F-2

F-13

B-4 C-7 D-13

E-2 E-9 E-8

E-6 E-5 E-4 E-4

E-2 B-8 F-8

B-9 F-7 F-7

F-7

B-10

B-10

F-6 C-11 C-10

D102 D103 D104 D105 D106 D107 D108 D110 D111 D111

D113

D114

IC101 IC102

IC103

IC104 IC201 IC202 IC221

Q101 Q102 Q103

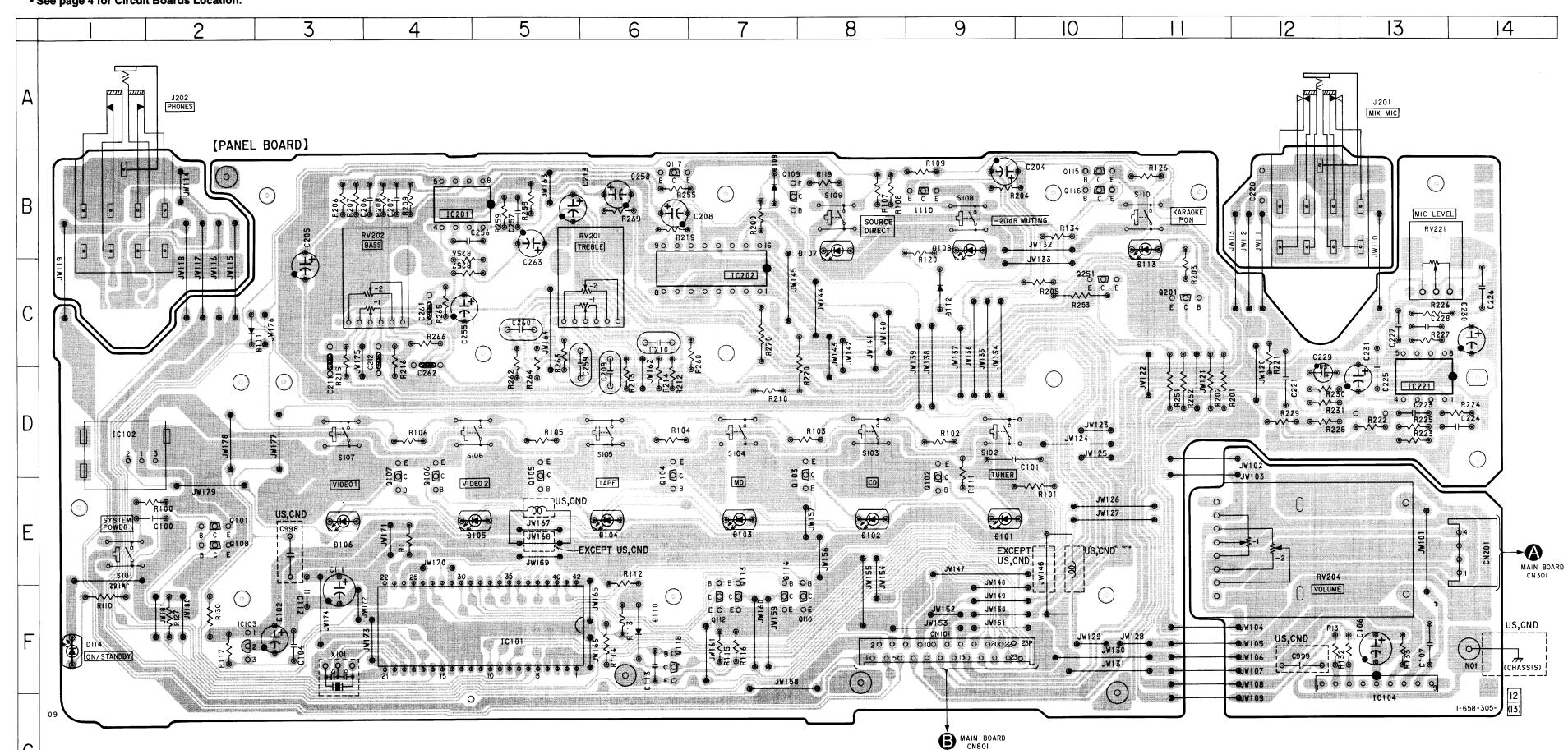
Q104 Q105 Q106 Q107 Q108 Q109 Q110 Q111 Q112 Q113

Q114 Q115 Q116 Q117

Q118 Q201 Q251

2-4. PRINTED WIRING BOARD — PANEL SECTION —

• See page 4 for Circuit Boards Location.



Note:

• • : parts extracted from the component side.

• Δ : internal component.

: Pattern from the side which enable seeing.

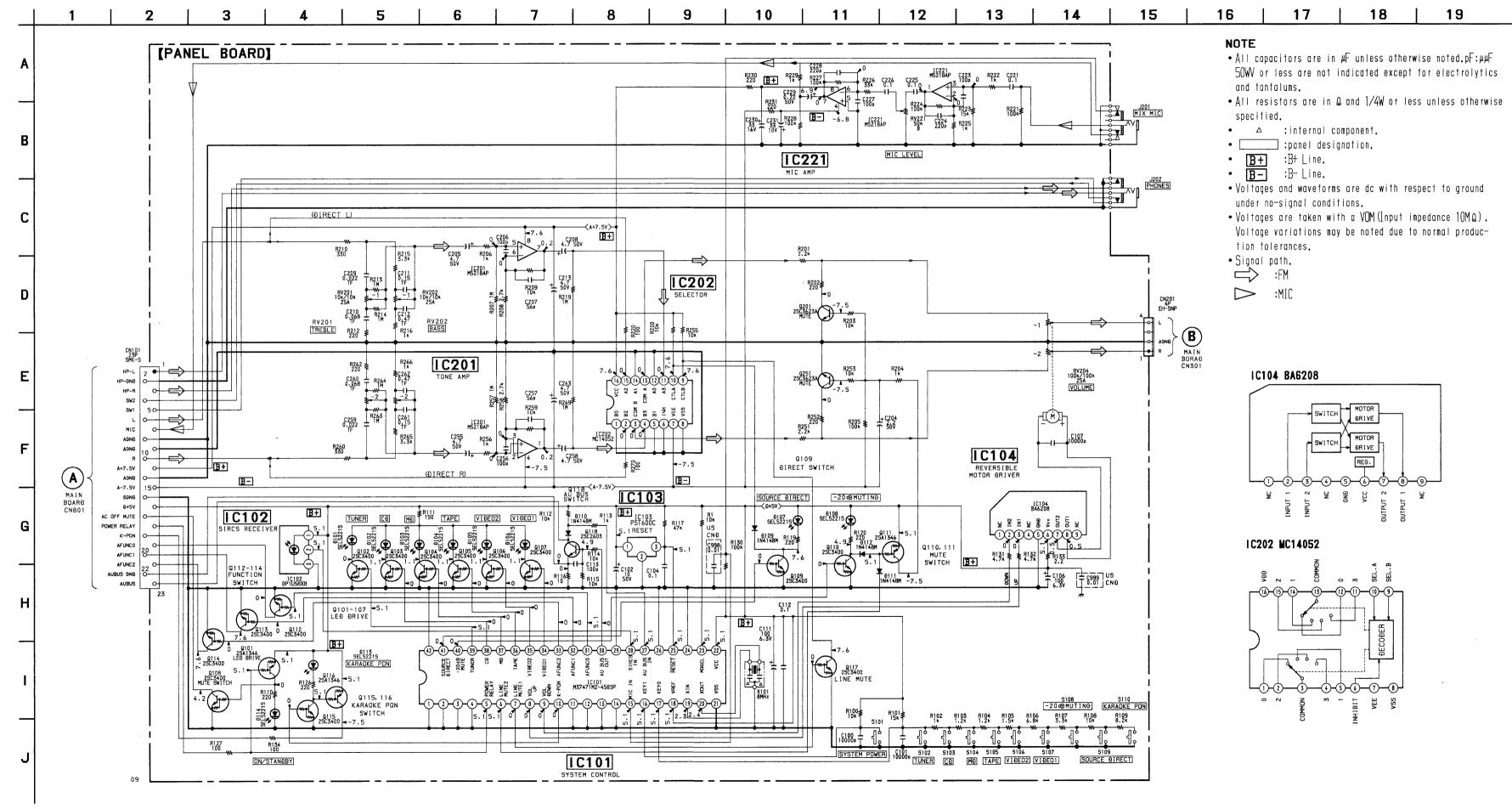
G

Abbreviation
 CND : Canadian model.

--- 10 ----

2-5. SCHEMATIC DIAGRAM — PANEL SECTION —

• See page 16 for IC Pin Function. (IC101)



2-6. IC PIN FUNCTION

• IC101 SYSTEM CONTROL (M37471M2-458SP)

Pin No.	Pin Name	I/O	Function
1 to 4	_	I	Not used. (Connected to ground)
5	POWER RELAY	О	Power relay control output.
6	LINE MUTE 2	О	Pre amp mute output.
7	LINE MUTE 1	О	Line mute output.
8	VOL UP	О	Volume up control output.
9	VOL DOWN	О	Volume down control output.
10	KARAOKE PON	О	KARAOKE PON control output.
11 to 14	_	I	Not used. (Connected to ground)
15	MIC IN	I	Microphone detect input. "L": Mic in
16	KEY 1	I	Key input. (analog)
17	KEY 0	I	Rey input. (analog)
18	V _{REF}	_	Reference voltage input (+5V).
19	XIN	I	System clock input (8 MHz).
20	XOUT	О	System clock output (8 MHz).
21	Vss	_	Ground
22	Vcc	_	Power supply (+5V).
23	MODEL	I	Destination identification input. (Fixed at "H")
24	_	I	Not used. (Connected to ground)
25	RESET	I	Reset signal input.
26	_	_	Not used. (Connected to ground)
27	AU BUS IN	I	Audio bus signal input.
28	SIRCS IN	I	SIRCS signal input.
29	_	I	Not used. (Connected to ground)
30	AU BUS OUT	О	Audio bus signal output.
31	AFUNC 0	О	
32	AFUNC 1	О	Function control output.*1
33	AFUNC 2	О	
34	VIDEO 1	О	
35	VIDEO 2	О	
36	TAPE	О	Function LED control output.
37	MD	0	Tunction LED control output.
38	CD	0	
39	TUNER	0	
40	-20 dB MUTE	О	−20 dB MUTING control output.
41	SOURCE DIRECT	О	SOURCE DIRECT control output.
42	_	I	Not used. (Connected to ground)

*1

	TUNER	CD	MD	TAPE	VIDEO1	VIDEO2	OFF
AFUNC0	L	Н	Н	L	L	Н	Н
AFUNC1	Н	L	Н	L	Н	L	Н
AFUNC2	Н	Н	L	L	L	L	Н

SECTION 3 EXPLODED VIEWS

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

• Abbreviation

CND : Canadian model

JE : Tourist model

HK : Hong Kong model

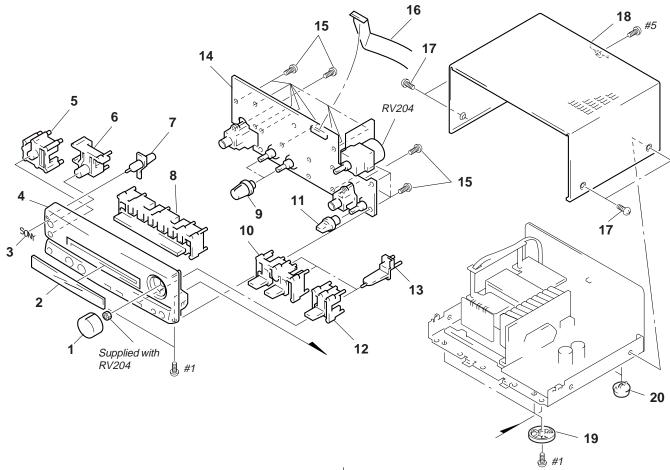
SP : Singapore model

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Replace only with part number specified.

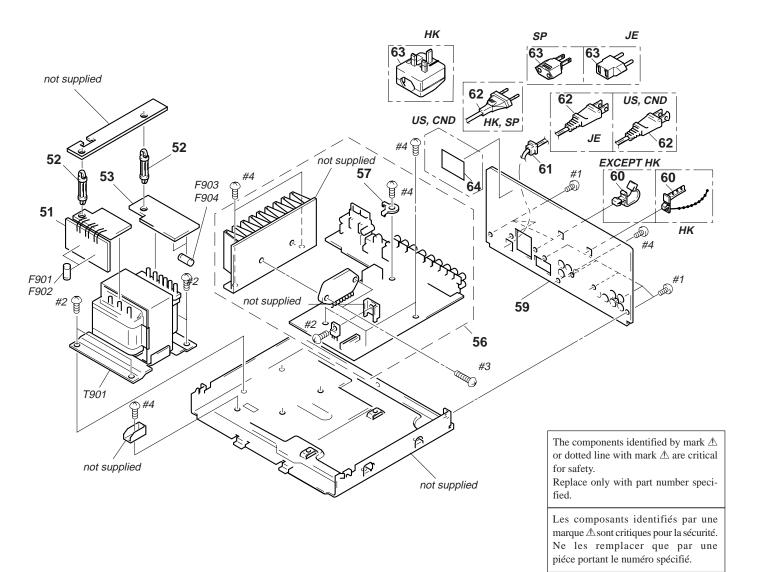
Les composants identifiés par une marque \(\Delta \) sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

3-1. FRONT PANEL SECTION



						41	
Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>	Ref. No.	Part No.	Description	<u>Remark</u>
1	4-970-944-31	KNOB (VOL)		12	4-977-711-01	BUTTON (KP)	
2	X-4946-945-1	WINDOW (FUNC) ASSY		13	4-977-713-11	INDICATOR (KP)	
3	4-962-708-11	EMBLEM (4-A), SONY		* 14	A-4378-764-A	PANEL BOARD, COMPLETE (JE, HK, SF	P)
4	4-977-707-01	PANEL, FRONT		* 14	A-4390-215-A	PANEL BOARD, COMPLETE (US,CND)	
5	4-977-715-11	WINDOW (RM)		15	4-951-620-01	SCREW (2.6X8), +BVTP	
6	4-977-708-11	BUTTON (POWER)		16	1-773-188-11	WIRE (FLAT TYPE) (23 CORE)	
7	4-977-712-11	INDICATOR (POWER)		17	3-363-099-01	SCREW (CASE 3 TP2)	
8	4-977-709-01	BUTTON (FUNC)		18	4-978-245-11	CASE	
9	4-970-965-31	KNOB (TONE)		19	4-977-699-11	LEG (F)	
10	4-977-710-01	BUTTON (MUTE)		20	4-965-822-01	FOOT	
11	4-973-043-31	KNOB (KR)					
				RV204	1-223-811-11	RES, VAR, CARBON 100K/100K (VOLU	JME)

3-2. CHASSIS SECTION



Ref. No.	Part No.	<u>Description</u>	Remark	Ref. No.	Part No.	<u>Description</u>	Remark
* 51	1-658-912-11	PRIMARY (E) BOARD		1 1 62	1-575-651-11	CORD, POWER (HK,SP)	
* 52	4-385-948-01	HOLDER, PCB		 ∆ 62	1-590-771-11	CORD, POWER (US,CND)	
* 53	1-658-303-11	SECONDARY BOARD		1 63 €	1-569-007-11	ADAPTER, CONVERSION 2P (JE)	
* 56	A-4390-216-A	MAIN BOARD, COMPLETE (JE,HK,SP))	 ∆ 63	1-569-008-11	ADAPTER, CONVERSION 2P (SP)	
* 56	A-4390-218-A	MAIN BOARD, COMPLETE (US,CND)		 ∆ 63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (I	HK)
* 57	4-942-204-01	PLATE, GROUND		64	3-703-044-26	LABEL, CAUTION (US,CND)	
* 59	4-977-717-01	PANEL, BACK (HK)		 ▲ F901	1-532-502-51	FUSE, TIME-LAG (1.25A, 250V)(JE,H	K,SP)
* 59	4-977-717-12	PANEL, BACK (SP)		 ▲ F901	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
* 59	4-977-717-22	PANEL, BACK (JE)		 ▲ F902	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK	(,SP)
* 59	4-977-717-31	PANEL, BACK (US,CND)		 ▲ F903	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK	(,SP)
* 60	4-949-235-01	HOOK (US,CND,JE,SP)		 ▲ F903	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
60	4-956-370-02	BAND, PLUG FIXED (HK)		 ▲ F904	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK	(,SP)
* 61	3-703-244-00	BUSHING (2104), CORD (US,CND,HK	,SP)	 ▲ F904	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
* 61	3-703-571-11	BUSHING (S) (4516), CORD (JE)		 ∆ T901	1-429-598-11	TRANSFORMER, POWER (JE,HK,SP)	
 ∆ 62	1-574-902-11	CORD, POWER (JE)		 ∆ T901	1-429-599-11	TRANSFORMER, POWER (US,CND)	

MAIN

SECTION 4 ELECTRICAL PARTS LIST

Note:

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque \(\Delta \) sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS

All resistors are in ohms METAL: Metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F: nonflammable

• SEMICONDUCTORS

In each case, u: μ , for example: uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,

uPC...: μ PC..., uPD...: μ PD...

- CAPACITORS
- uF: μF
 COILS
- uH : μ H
- · Abbreviation

CND: Canadian model

JE: Tourist model

HK: Hong Kong model

SP: Singapore model

Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>
*	A-4390-216-A	MAIN BOARD, CO	•		k ak	C654	1-162-215-31	CERAMIC	47PF	5%	50V
						C655	1-126-022-11	ELECT	47uF	20%	16V
*	A-4390-218-A	MAIN BOARD, CO	MPLETE (US	S,CND)		C656	1-126-059-11	ELECT	10uF	20%	50V
		******	******	*****		C701	1-162-294-31		0.001uF	10%	50V
						C702	1-126-052-11	ELECT	100uF	20%	10V
*	4-942-204-01	PLATE, GROUND				C703	1-126-045-11	ELECT	2.2uF	20%	50V
		SCREW +BVTT 3X	(6 (S)								
			` '			C704	1-126-052-11	ELECT	100uF	20%	10V
		< CAPACITOR >				C711	1-126-233-11	ELECT	22uF	20%	50V
						C712	1-126-233-11		22uF	20%	50V
C301	1-126-045-11	ELECT	2.2uF	20%	50V	C761	1-126-233-11	ELECT	22uF	20%	50V
C303	1-162-282-31	CERAMIC	100PF	10%	50V	C762	1-126-233-11	ELECT	22uF	20%	50V
C304	1-126-868-11	ELECT	47uF	20%	50V						
C305	1-126-868-11	ELECT	47uF	20%	50V	C804	1-136-165-00	FILM	0.1uF	5%	50V
C306	1-124-122-11		100uF	20%	50V	C805	1-126-224-11		4700uF	20%	42V
						C807	1-126-052-11		100uF	20%	35V
C307	1-126-059-11	ELECT	10uF	20%	50V	C808	1-126-052-11	ELECT	100uF	20%	10V
C308	1-126-233-11	ELECT	22uF	20%	50V	C809	1-124-997-11	ELECT	470uF	20%	10V
C309	1-164-159-11		0.1uF		50V						
C310	1-136-163-00	FILM	0.068uF	5%	50V	C814	1-136-165-00	FILM	0.1uF	5%	50V
C311	1-136-163-00	FILM	0.068uF	5%	50V	C815	1-126-224-11	ELECT	4700uF	20%	42V
						C817	1-126-052-11		100uF	20%	35V
C312	1-126-868-11	ELECT	47uF	20%	50V	C818	1-126-052-11		100uF	20%	10V
C351	1-126-045-11	ELECT	2.2uF	20%	50V	C819	1-124-997-11	ELECT	470uF	20%	10V
C353	1-162-282-31		100PF	10%	50V						
C354	1-126-868-11		47uF	20%	50V	C821	1-136-153-00	FILM	0.01uF	5%	50V
C355	1-126-868-11		47uF	20%	50V	C822	1-126-952-11		1000uF	20%	16V
						C824	1-124-997-11		470uF	20%	10V
C356	1-124-122-11	ELECT	100uF	20%	50V	C825	1-164-159-11		0.1uF		50V
C357	1-126-059-11	ELECT	10uF	20%	50V	C831	1-136-153-00	FILM	0.01uF	5%	50V
C360	1-136-163-00		0.068uF	5%	50V						
C361	1-136-163-00	FILM	0.068uF	5%	50V			< CONNECTOR >			
C510	1-162-282-31		100PF	10%	50V						
						CN11	1-770-158-21	HOUSING, CONNE	ECTOR 7P (S	SYSTEM	CONTROL)
C531	1-162-306-11	CERAMIC	0.01uF	30%	16V	CN501	1-770-966-11	PIN, CONNECTOR	(PCB)(V TY	PE)6P	,
C532	1-162-306-11	CERAMIC	0.01uF	30%	16V	* CN801	1-568-839-11			•	
C533	1-162-306-11	CERAMIC	0.01uF	30%	16V						
C534	1-162-306-11	CERAMIC	0.01uF	30%	16V			< DIODE >			
C560	1-162-282-31	CERAMIC	100PF	10%	50V						
						D301	8-719-987-63	DIODE 1N4148M	1		
C601	1-162-294-31	CERAMIC	0.001uF	10%	50V	D302	8-719-987-63	DIODE 1N4148N	1		
C602	1-162-306-11	CERAMIC	0.01uF	30%	16V	D351	8-719-987-63	DIODE 1N4148N	1		
C603	1-162-282-31	CERAMIC	100PF	10%	50V	D352	8-719-987-63	DIODE 1N4148M	1		
C604	1-162-215-31		47PF	5%	50V	D702		DIODE 1N4148M			
C605	1-126-022-11		47uF	20%	16V						
						D803	8-719-987-63	DIODE 1N4148M	1		
C606	1-126-059-11	ELECT	10uF	20%	50V	D804		DIODE D5SBA20			
C651	1-162-294-31		0.001uF	10%	50V	D808		DIODE 10E2			
C652	1-162-306-11		0.01uF	30%	16V	D809		DIODE HZS9A2L	-		
C653	1-162-282-31		100PF	10%	50V	D813		DIODE 1N4148N			
						1					

MAIN

Ref. No.	Part No.	<u>Description</u>			Remark		Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>	
D818	8-719-200-02	DIODE 10F2					R354	1-249-438-11	CARBON	56K	5%	1/4W	
D819	8-719-933-54		1 21				R355	1-260-103-11		2.2K	5%	1/2W	
D017	0 717 733 34	DIODE 112371	1ZL				R356	1-260-103-11		2.2K	5%	1/2W	
		< IC >						1-212-881-11		100	5%	1/4W	F
		< 10 >					△ R360		METAL PLATE	0.22	J 70	2W	F
IC301	0 740 041 52	IC STK-4152I	1				211 K300	1-217-131-00	WILIAL FLAIL	0.22		Z V V	'
		IC 31K-41321					D241	1 240 417 11	CADDON	11/	5%	1/4W	Е
IC501		IC MC14051E					R361	1-249-417-11		1K			Г
IC502							R362	1-249-431-11		15K	5%	1/4W	
IC503		IC MC14052E					R368	1-260-076-11		10	5%	1/2W	_
IC504	8-759-000-49	IC MC14066E	BCP				R501	1-249-417-11		1K	5%	1/4W	
							R502	1-249-425-11	CARBON	4.7K	5%	1/4W	F
IC601		IC M5218AP											
IC701		IC uPC1237H	A				R503	1-249-417-11		1K	5%	1/4W	
IC802	8-759-231-53	IC TA7805S					R504	1-249-425-11		4.7K	5%	1/4W	
							R505	1-249-417-11	CARBON	1K	5%	1/4W	
		< JACK >					R506	1-249-417-11	CARBON	1K	5%	1/4W	
							R507	1-249-417-11	CARBON	1K	5%	1/4W	F
J501	1-770-015-11	JACK, PIN 6P ((TUNER IN,CD	IN,MD O	UT)								
J502	1-770-015-11	JACK, PIN 6P ((MD IN,TAPE	IN/OUT)			R508	1-249-417-11	CARBON	1K	5%	1/4W	F
J503	1-770-015-11	JACK, PIN 6P ((VIDEO1 IN/O	UT,VIDEO2	2 IN)		R509	1-249-417-11	CARBON	1K	5%	1/4W	F
		,			,		R512	1-249-429-11		10K	5%	1/4W	
		< TRANSISTOR	₹>				R513	1-249-425-11		4.7K	5%	1/4W	F
							R514	1-249-429-11		10K	5%	1/4W	-
Q301	8-729-140-82	TRANSISTOR	25A988-PAF	ΔΕΔ			1.011	1217 127 11	0/11/2014	1010	070	17 100	
Q302		TRANSISTOR		, LI			R521	1-249-417-11	CARRON	1K	5%	1/4W	F
Q302		TRANSISTOR					R522	1-249-417-11		1K	5%	1/4W	
				۸۲۸									
Q351		TRANSISTOR		AEA			R523	1-249-417-11		1K	5%	1/4W	F
Q809	8-729-140-96	TRANSISTOR	2SD774-34				R531	1-249-429-11		10K	5%	1/4W	
							R532	1-249-429-11	CARBON	10K	5%	1/4W	
Q819	8-729-140-97	TRANSISTOR	2SB734-34										
							R533	1-249-429-11		10K	5%	1/4W	
		< RESISTOR >					R534	1-247-807-31		100	5%	1/4W	
							R535	1-247-807-31	CARBON	100	5%	1/4W	
R301	1-249-417-11	CARBON	1K	5%	1/4W	F	R536	1-247-807-31	CARBON	100	5%	1/4W	
R302	1-249-438-11	CARBON	56K	5%	1/4W		R551	1-249-417-11	CARBON	1K	5%	1/4W	F
R303	1-249-415-11	CARBON	680	5%	1/4W	F							
R304	1-249-438-11	CARBON	56K	5%	1/4W		R552	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R305	1-260-103-11		2.2K	5%	1/2W		R553	1-249-417-11	CARBON	1K	5%	1/4W	
							R554	1-249-425-11		4.7K	5%	1/4W	
R306	1-260-103-11	CARBON	2.2K	5%	1/2W		R555	1-249-417-11		1K	5%	1/4W	
 A R309	1-212-881-11		100	5%	1/4W	F	R556	1-249-417-11		1K	5%	1/4W	
△R310		METAL PLATE	0.22	370	2W	F	11330	1 2 7 7 1 7 1 1	ONNEON	110	370	17 7 0 0	
				5%	1/4W		R557	1-249-417-11	CADDON	1K	5%	1/4W	Е
R311 R312	1-249-417-11 1-249-431-11		1K 15K	5%	1/4W	'	R558	1-249-417-11		1K	5%	1/4W	
K312	1-249-431-11	CARBON	ACI	370	1/4 VV								
D04.4	4 0/0 000 44	OADDON	41/	F0/	4 (0) 1 (R559	1-249-417-11		1K	5%	1/4W	F
R314	1-260-099-11		1K	5%	1/2W		R562	1-249-429-11		10K	5%	1/4W	_
R316	1-260-099-11		1K	5%	1/2W		R563	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R318	1-260-076-11		10	5%	1/2W								
R322	1-249-429-11		10K	5%	1/4W		R564	1-249-429-11	CARBON	10K	5%	1/4W	
R323	1-247-881-00	CARBON	120K	5%	1/4W		R571	1-249-417-11	CARBON	1K	5%	1/4W	F
							R572	1-249-417-11	CARBON	1K	5%	1/4W	F
R324	1-249-437-11	CARBON	47K	5%	1/4W		R573	1-249-417-11	CARBON	1K	5%	1/4W	F
R325	1-249-417-11	CARBON	1K	5%	1/4W	F	R601	1-249-437-11	CARBON	47K	5%	1/4W	
R326	1-249-439-11	CARBON	68K	5%	1/4W								
R327	1-249-437-11		47K	5%	1/4W		R602	1-249-434-11	CARBON	27K	5%	1/4W	
R328	1-249-426-11		5.6K	5%	1/4W		R603	1-249-437-11		47K	5%	1/4W	
	20 .1	. = =::	=:=!\$	0			R604	1-249-437-11		47K	5%	1/4W	
R329	1-249-433-11	CARBON	22K	5%	1/4W		R605	1-249-437-11		47K	5%	1/4W	
ÆR330	1-212-849-00		4.7	5%	1/4W	F	R606	1-249-441-11		100K	5%	1/4W	
R351	1-249-417-11		4.7 1K	5%	1/4W		1,000	1-27/*441-11	ONIOUN	TOOK	J /0	1/4VV	
R352	1-249-417-11			5% 5%		I.	D407	1-249-441-11	CADDON	100K	5%	1/4W	
			56K		1/4W	г	R607						
R353	1-249-415-11	CAKBUN	680	5%	1/4W	Γ	R651	1-249-437-11	CARBUN	47K	5%	1/4W	

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specified.

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						1						
Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>		Ref. No.	Part No.	Description			<u>Remark</u>
R652	1-249-434-11	CARBON	27K	5%	1/4W		C207	1-162-217-31		56PF	5%	50V
R653	1-249-437-11		47K	5%	1/4W		C208	1-126-163-11		4.7uF	20%	50V
R654	1-249-437-11	CARBON	47K	5%	1/4W		C209	1-136-157-00	FILIVI	0.022uF	5%	50V
R655	1-249-437-11	CARBON	47K	5%	1/4W		C210	1-136-163-00	FILM	0.068uF	5%	50V
R656	1-249-441-11	CARBON	100K	5%	1/4W		C211	1-136-167-00	FILM	0.15uF	5%	50V
R701		CARBON	10K	5%	1/4W		C212	1-136-173-00	FILM	0.47uF	5%	50V
R702	1-249-441-11		100K	5%	1/4W		C213	1-126-163-11	ELECT	4.7uF	20%	50V
R703	1-249-430-11	CARBON	12K	5%	1/4W		C221	1-164-159-11	CERAMIC	0.1uF		50V
R704	1-249-437-11	CARBON	47K	5%	1/4W		C223	1-162-282-31	CERAMIC	100PF	10%	50V
 A R705	1-215-890-11		470	5%		Εl	C224	1-162-286-31		220PF	10%	50V
R706	1-249-438-11	CARBON	56K	5%	1/4W		C225	1-164-159-11		0.1uF		50V
R707	1-249-437-11	CARBON	47K	5%	1/4W		C226	1-164-159-11	CERAMIC	0.1uF		50V
R711	1-260-095-11	CARBON	470	5%	1/2W		C227	1-162-282-31	CERAMIC	100PF	10%	50V
R713	1-249-441-11	CARBON	100K	5%	1/4W		C228	1-162-286-31	CERAMIC	220PF	10%	50V
R761	1-260-095-11	CARBON	470	5%	1/2W		C229	1-124-464-11		0.22uF	20%	50V
R763		CARBON	100K	5%	1/4W		C230	1-104-663-11		33uF	20%	16V
R803	1-249-429-11	CARBON	10K	5%	1/4W		C231	1-104-663-11	ELECT	33uF	20%	16V
R805	1-260-103-11	CARBON	2.2K	5%	1/2W		C255	1-126-163-11	ELECT	4.7uF	20%	50V
R807	1-260-103-11	CADDON	2.2K	5%	1/2W		0054	1-162-282-31	CEDAMIC	100PF	10%	50V
R807	1-249-421-11		2.2K 2.2K	5% 5%	1/2VV 1/4W	_	C256 C257	1-162-282-31		56PF	5%	50V 50V
R813		CARBON	10K	5%	1/4W	'	C257	1-126-163-11		4.7uF	20%	50V
R815	1-260-103-11		2.2K	5%	1/2W		C259	1-136-157-00		0.022uF	5%	50V
R817	1-260-103-11		2.2K	5%	1/2W		C260	1-136-163-00		0.068uF	5%	50V
R819	1-249-421-11	CARBON	2.2K	5%	1/4W	F	C261	1-136-167-00 1-136-173-00		0.15uF	5%	50V 50V
		< RELAY >					C262 C263	1-136-173-00		0.47uF 4.7uF	5% 20%	50V 50V
		< KLLAT >					C203	1-162-306-11		4.7ui 0.01uF	20%	16V
RY701	1-755-126-11	RELAY					0770	1 102 300 11	OLIV IIVIIO	0.0101	2070	(US,CND)
							C999	1-162-306-11	CERAMIC	0.01uF	20%	16V
		< TERMINAL >										(US,CND)
TB401	1-537-240-11	TERMINAL BOARI	D (CHECKER	R PINI/(SE	PFAKER)				< CONNECTOR >			
15401	1 007 240 11	TERMINAL BOARD	D (OFFICIALI	(1111)(31	Lincerty				COMMEDIAN			
******	*******	*******	******	*****	******	*	* CN101		SOCKET, CONNEC			
*	Λ 1379 761 Λ	PANEL BOARD, C	OMDLETE (IE HK CD)		CN201	1-/64-341-11	PIN, CONNECTOR	(PCB)(L TY	PE)4P	
	A-4370-704-A	******	,		,				< DIODE >			
*	A-4390-215-A	PANEL BOARD, CO					D101		DIODE SEL5221S	,		
		also also also also also also also also		****			D102		DIODE SEL5221			
		< CAPACITOR >					D103 D104		DIODE SEL5221S			
		< CAFACITOR >					D104		DIODE SEL5221	. ,		
C100	1-162-306-11	CERAMIC	0.01uF	30%	16V		D100	0 717 040 44	DIODE SEESEET	J (VIDEOZ)		
C101	1-162-306-11		0.01uF	30%	16V		D106	8-719-046-44	DIODE SEL52215	S (VIDEO1)		
C102	1-124-907-11		10uF	20%	50V		D107		DIODE SEL52215	. ,	DIRECT)	
C104	1-164-159-11	CERAMIC	0.1uF		50V		D108		DIODE SEL52215			
C106	1-126-968-11	ELECT	100uF	20%	6.3V		D109	8-719-987-63	DIODE 1N4148N	1		
0107	1 1/0 00/ 11	CEDANAIC	0.01. 5	2007	1.07		D110	8-719-987-63	DIODE 1N4148N	1		
C107	1-162-306-11		0.01uF	30%	16V		D111	0.710.007.70	DIODE 1N/11/10N	,		
C111	1-126-968-11		100uF	20%	6.3V		D111		DIODE 1N4148N			
C112 C113	1-164-159-11 1-162-282-31		0.1uF 100PF	10%	50V 50V		D112 D113		DIODE 1N4148N DIODE SEL5221S		D∪VI)	
C204	1-102-282-31		2.2uF	20%	50V 50V		D113 D114		DIODE SEL52213			
0204	1 127 237-00	LLLOI	£.£UI	2070	50 v		בווד	3 7 1 7 0-10-14	DIODE DELUZZIA	- (OINOIMINI	1	
C205	1-126-163-11		4.7uF	20%	50V							
C206	1-162-282-31	CERAMIC	100PF	10%	50V							

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PANEL

Ref. No.	Part No.	Description			Remark	1	Ref. No.	Part No.	Description			Remark	
		< IC >					R115	1-249-429-11	CADRON	10K	5%	1/4W	
		< 10 >					R116	1-249-429-11		10	5%	1/4W	г
IC101	0 750 250 22	IC M37471M2	0 4E0CD				R117	1-249-393-11		47K	5%	1/4W	Г
IC101		IC WIS747 IW.					R117	1-249-437-11		220	5%	1/4W	Е
IC102		IC GPT058XE					KII9	1-249-409-11	CARBON	220	5%	1/4 VV	Г
			I				D120	1 040 400 11	CADDON	220	F0/	1/4\4/	г
IC104	8-759-962-08						R120	1-249-409-11		220	5% 5%	1/4W 1/4W	
IC201	8-759-634-51	IC IVIDZ I BAP					R126	1-249-409-11		220	5%		Г
10000	0.750.000.40	IC MC140F0F)CD				R127	1-247-807-31		100	5%	1/4W	
IC202		IC MC14052E	SCP				R130	1-249-441-11		100K	5%	1/4W	_
IC221	8-759-634-51	IC IVI5218AP					R131	1-249-425-11	CARBON	4.7K	5%	1/4W	ŀ
		14.01/					D100	1 240 425 11	CADDON	4 71/	E0/	1/4/4/	_
		< JACK >					R132	1-249-425-11		4.7K	5%	1/4W	
1004	4 507 054 00	LA OLI DI LONE I	'A 41) / A 410)				R133	1-249-385-11		2.2	5%	1/6W	ŀ
J201		JACK,PHONE (R134	1-247-807-31		100	5%	1/4W	
J202	1-507-854-00	JACK,PHONE (PHONES)				R200	1-249-429-11		10K	5%	1/4W	_
		TD 4 1 10 10 TO	_				R201	1-249-421-11	CARBON	2.2K	5%	1/4W	ŀ
		< TRANSISTOR	₹>										_
							R202	1-249-409-11		220	5%	1/4W	F
Q101		TRANSISTOR					R203	1-249-429-11		10K	5%	1/4W	
Q102		TRANSISTOR					R204	1-249-417-11		1K	5%	1/4W	F
Q103		TRANSISTOR					R205	1-249-441-11		100K	5%	1/4W	
Q104		TRANSISTOR					R206	1-249-417-11	CARBON	1K	5%	1/4W	F
Q105	8-729-422-73	TRANSISTOR	UN4212										
							R207	1-247-903-00		1M	5%	1/4W	
Q106	8-729-422-73	TRANSISTOR	UN4212				R208	1-249-422-11	CARBON	2.7K	5%	1/4W	F
Q107	8-729-422-73	TRANSISTOR	UN4212				R209	1-249-429-11	CARBON	10K	5%	1/4W	
Q108	8-729-422-73	TRANSISTOR	UN4212				R210	1-249-411-11	CARBON	330	5%	1/4W	
Q109	8-729-422-73	TRANSISTOR	UN4212				R212	1-249-409-11	CARBON	220	5%	1/4W	F
Q110	8-729-422-73	TRANSISTOR	UN4212										
							R213	1-247-903-00	CARBON	1M	5%	1/4W	
Q111	8-729-900-63	TRANSISTOR	DTA124ES				R214	1-247-903-00	CARBON	1M	5%	1/4W	
Q112	8-729-422-73	TRANSISTOR	UN4212				R215	1-249-423-11	CARBON	3.3K	5%	1/4W	F
Q113	8-729-422-73	TRANSISTOR	UN4212				R216	1-249-417-11	CARBON	1K	5%	1/4W	F
Q114	8-729-422-73	TRANSISTOR	UN4212				R219	1-247-903-00	CARBON	1M	5%	1/4W	
Q115		TRANSISTOR											
							R220	1-247-807-31	CARBON	100	5%	1/4W	
Q116	8-729-900-63	TRANSISTOR	DTA124ES				R221	1-249-441-11	CARBON	100K	5%	1/4W	
Q117		TRANSISTOR					R222	1-249-417-11		1K	5%	1/4W	F
Q118		TRANSISTOR					R223	1-249-431-11	CARBON	15K	5%	1/4W	
Q201		TRANSISTOR					R224	1-249-441-11		100K	5%	1/4W	
Q251		TRANSISTOR											
							R225	1-249-417-11	CARBON	1K	5%	1/4W	F
		< RESISTOR >					R226	1-249-435-11		33K	5%	1/4W	
							R227	1-249-441-11		100K	5%	1/4W	
R1	1-249-429-11	CARBON	10K	5%	1/4W		R228	1-249-441-11		100K	5%	1/4W	
R100	1-249-429-11		10K	5%	1/4W		R229	1-249-417-11		1K	5%	1/4W	F
R101	1-249-431-11		15K	5%	1/4W								-
R102	1-249-417-11		1K	5%	1/4W	F	R230	1-249-409-11	CARBON	220	5%	1/4W	F
R103	1-249-418-11		1.2K	5%	1/4W	- 1	R231	1-249-409-11		220	5%	1/4W	
11103	1 247 410 11	ONTO	1.21	370	17400	.	R251	1-249-421-11		2.2K	5%	1/4W	
R104	1-249-418-11	CARRON	1.2K	5%	1/4W	F	R252	1-249-409-11		220	5%	1/4W	
R105	1-249-419-11		1.5K	5%	1/4W		R253	1-249-429-11		10K	5%	1/4W	'
R106	1-249-427-11		6.8K	5%	1/4W		11200	1 247 427 11	ONTO	TOIC	370	17-100	
R107	1-249-423-11		3.3K	5%	1/4W		R255	1-249-429-11	CARRON	10K	5%	1/4W	
R108	1-249-429-11		10K	5%	1/4W	'	R256	1-249-417-11		1K	5%	1/4W	E
11100	1 47/7427	OT INDOIN	ION	570	:/ ¬ VV		R257	1-247-903-00		1M	5%	1/4W	1
R109	1-249-428-11	CARRON	8.2K	5%	1/4W	F	R257 R258	1-247-903-00		2.7K	5%	1/4W	F
R109 R110	1-249-428-11		8.2K 220	5% 5%	1/4VV 1/4W		R258 R259	1-249-422-11		2.7K 10K	5% 5%	1/4VV 1/4W	1
R110	1-249-409-11		150	5%	1/4W		11237	1-247-427-11	CAINDON	IUN	J /0	1/4VV	
						'	D240	1 2/0 /11 11	CADDON	220	E0/	1/4\\	
R112 R113	1-249-429-11 1-249-417-11		10K 1K	5% 5%	1/4W 1/4W	_	R260 R262	1-249-411-11 1-249-409-11		330 220	5% 5%	1/4W 1/4W	Е
K113	1-247-41/-11	CARDUN	1 N	J 70	1/4VV	'	R262 R263	1-249-409-11		220 1M	5% 5%	1/4VV 1/4W	٢
R114	1-249-429-11	CADDON	10K	5%	1/4W		R263 R264	1-247-903-00			5% 5%	1/4VV 1/4W	
N114	1-247-427-11	CARDON	IUN	J /0	1/4VV		NZ04	1-247-703-00	CARDON	1M	J /0	1/4VV	

PANEL

PRIMARY (E)

SECONDARY

Ref. No.	Part No.	Description			Remark		Ref. No.	Part No.	Description	Domark
·		<u> </u>							Description	<u>Remark</u>
R265	1-249-423-11	CARBON	3.3K	5%	1/4W	F	*	1-658-303-11	SECONDARY BOARD ************	
R266	1-249-417-11		1K	5%	1/4W	F			0011150705	
R269 R270	1-247-903-00		1M 100	5% 5%	1/4W 1/4W				< CONNECTOR >	
K2/U	1-247-807-31	CARBUN	100	3%	1/4 VV		CN901	1_770_966_11	PIN, CONNECTOR (PCB)(V TYPE)6P	
		< VARIABLE RESIS	STOR >				I		PIN, CONNECTOR (PCB)(V TYPE)3P	
511004		550 1/15 01550							FUEF	
RV201		RES, VAR, CARBO	,)				< FUSE >	
RV202 RV204		RES, VAR, CARBO			IVVE)		 ▲ F903	1 576 105 11	FUSE (2.5A 250V)(US,CND)	
		RES, VAR, CARBO		`	IIVIL)		<u></u>		FUSE, TIME-LAG (2.5A 250V)(JE,HK,	SP)
ICV221	1 220 771 11	TREO, VIIII, OTHER	v oon (iviio	LL V LL)			 △ F904		FUSE (2.5A 250V)(US,CND)	01)
		< SWITCH >					 ⚠ F904		FUSE, TIME-LAG (2.5A 250V)(JE,HK,	SP)
S101		SWITCH, TACTILE	•	OWER)					< FUSE HOLDER >	
S102		SWITCH, TACTILE	` '				FUODO	1 522 202 44	FUCE HOLDED	
S103		SWITCH, TACTILE	` '				FH903		FUSE HOLDER FUSE HOLDER	
S104 S105		SWITCH, TACTILE SWITCH, TACTILE					FH904 FH913		FUSE HOLDER	
3100	1-334-303-21	SWITCH, IACTILE	(IAPE)				FH913		FUSE HOLDER	
S106	1-554-303-21	SWITCH, TACTILE	(VIDEO2)				111714	1-333-273-11	1 OSL HOLDER	
S107		SWITCH, TACTILE	. ,				*******	*********	*********	*****
S108	1-554-303-21	SWITCH, TACTILE	(-20dB MU)	ΓING)						
S109	1-554-303-21	SWITCH, TACTILE	SOURCE D	IRECT)					MISCELLANEOUS	
S110	1-554-303-21	SWITCH, TACTILE	(KARAOKE	PON)					*******	
		. VIDDATOD .					1,4	1 772 100 11	WIDE (ELAT TYPE) (22 CODE)	
		< VIBRATOR >					16 		WIRE (FLAT TYPE) (23 CORE) CORD, POWER (JE)	
X101	1-579-125-11	VIBRATOR, CERAN	AIC (8MHz)				1 1 62		CORD, POWER (HK,SP)	
7(101	1 077 120 11	VIBRATION, OLIVIN	110 (0111112)				1 1 62 1 € 62		CORD, POWER (US,CND)	
******	*****	*********	******	*****	*****	**	1 63 €		ADAPTER, CONVERSION 2P (JE)	
*	1-658-912-11	PRIMARY (E) BOA	RD				 ∆ 63	1-569-008-11	ADAPTER, CONVERSION 2P (SP)	
	1 000 712 11	*******					1 1 63		ADAPTOR, CONVERSION PLUG 3P (H	HK)
									FUSE, TIME-LAG (1.25A, 250V)(JE,H	
		< CONNECTOR >					 ▲ F901		FUSE (2.5A, 250V)(US,CND)	,
							 1 1 1 1 1 1 1 1 1 	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK	,SP)
CN900	1-564-321-00	PIN, CONNECTOR	2P							
		FLICE					 △ F903		FUSE, TIME-LAG (2.5A, 250V)(JE,HK	,SP)
		< FUSE >					 △ F903		FUSE (2.5A, 250V)(US,CND)	CD)
 £ F901	1 522 502 51	FUSE, TIME-LAG (1 25/ 25/\/	/ IE UV	CD)		<u></u>		FUSE, TIME-LAG (2.5A, 250V)(JE,HK FUSE (2.5A, 250V)(US,CND)	,SP)
ÆF901		FUSE (2.5A 250V)		I(JL,IIIX,	31)		RV204		RES, VAR, CARBON 100K/100K (VOL	IIME)
 F902		FUSE, TIME-LAG (JE,HK,S	P)		1000	1 220 011 11	TES, WILL, SHIEDON TOOK (VOL	.OIVIL)
		,	,		,		 ∆T901	1-429-598-11	TRANSFORMER, POWER (JE,HK,SP)	
		< FUSE HOLDER >					△ T901	1-429-599-11	TRANSFORMER, POWER (US,CND)	
FI 1001	1 522 202 11	FUCE HOLDED					****	은 독은 독은 독은 독은 독은 독은 독	***********	***
FH901 FH902		FUSE HOLDER FUSE HOLDER (JE	TIN CD)				*******	`	· • • • • • • • • • • • • • • • • • • •	~~~~~~~
FH911		FUSE HOLDER (JE	,пк,зг)						*******	
FH912		FUSE HOLDER (JE	HK SP)						HARDWARE LIST	
111712	1 000 270 11	TOOL HOLDER (SE	,,,,,,,						*******	
		< RESISTOR >								
							#1		SCREW +BVTP 3X10 TYPE2 N-S	
⚠ R900	1-202-725-00	SOLID	3.3M	10%	1/2W		#2		SCREW +BVTT 3X6 (S)	
					(US,CN	ID)	#3		SCREW +BVTP 3X16 TYPE2 IT-3	
		CMITCH					#4		SCREW +BVTP 3X8 TYPE2 N-S	
		< SWITCH >					#5	1-005-812-09	SCREW +BVTT 3X8 (S)	
 ∆ S901	1-572-675-11	SWITCH, POWER	VOLTAGE CH	HANGE						
			OLTAGE SEI		(JE,HK,S	SP)				
alcalca e e e e e e e	analogo de la companione	and the same of th	national desired	and the second	ata ata ata ata ata ata		ı			
******	*********	******	. * * * * * * * * *	*****	******	**				

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number

specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

Ne les remplacer que par une piéce portant le numéro spécifié.

CDP-M7

SERVICE MANUAL



US Model Canadian Model E Model Tourist Model

CDP-M7 is the CD player section in DHC-MD7.

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM38A-5BD19
Base Unit Type	BU-5BD19
Optical Pick-up Type	KSS-213B/K-N

SPECIFICATIONS

System

Compact disc and digital audio system

Laser

Semiconductor laser $(\lambda = 780 \text{ nm})$

Emission duration: continuous

780 – 790 nm

Wavelength Frequence response

C:---1 to ---!--

 $2 Hz - 20 kHz (\pm 0.5 dB)$

Signal-to-noise ratio

More than 105 dB

Dynamic range

More than 90 dB

Outputs

CD OUT (phono jacks):

Output level 2 V (at 50 kilohms)

Load impedance over

10 kilohms

CD DIGITAL OPTICAL OUT

(Square optical connector jack, rear

panel):

wave length 660 nm output level -18 dBm

Dimensions

Approx. 280 x 122.5 x 341 mm (11 1/8 x 4 7/8 x 13 1/2 in) (w/h/d)

incl. projecting parts and controls
Mass Approx. 3.6kg

(7lb15oz)

Design and specifications are subject to change without notice.

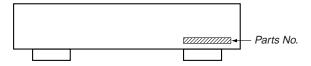




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MODEL IDENTIFICATION — BACK PANEL —



	PARTS No.
US,Canadian model	4-977-697-2□
Other model	4-977-697-1□

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

CLASS 1 LASER PRODUCT LUOKAN 1 LASERLAITE KLASS 1 LASERAPPARAT This appliance is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

ADVARSEL ; USYMILIG LASERSTRALING VED ABNING NAR SIKKERHEDSAFBIYOFBE ER DIE AF FUNKTION. UNDGA UDS. ÆTITELSE FOR STRÁLING.

VARO! ; AVATTALESSA JA SUDALJUKTIUS OHTETTAESSA DLET ALTTIINA LASERSÁTELIVILE.

VARNING ; LASERSTRÁLING NAR DENAN DEL ÄR OPPNÁD OCH SPARREN ÁR URXOPPLAD.

ADVARSEL ; USYMILIG LASERSTRÁLING NÁR DEKSEL ÁPRIES UNDÁG EKSPÖNERING FOR STRÁLEN.

This caution label is located inside the unit.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY CHECK-OUT

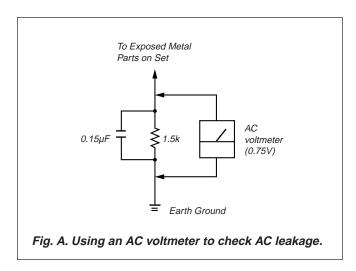
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

- A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
- 2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
- 3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINEWITH MARK \triangle ONTHE SCHEMATIC DIAGRAMS AND INTHE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 SERVICE NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

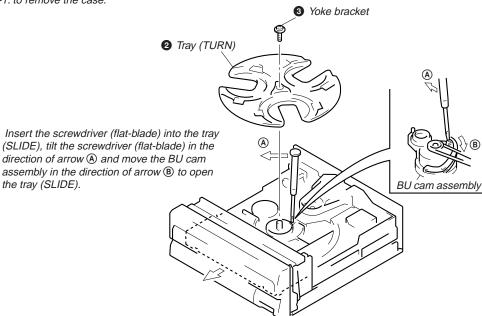
The flexible board is easily damaged and should be handled with

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

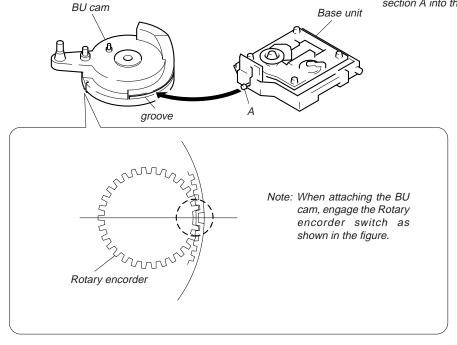
How To Open The Disc Tray When Power Switch Turns Off

1 Refer to 3-1. to remove the case.



Note For Installation (ROTARY ENCORDER (S811))

Note: When attaching the Base unit, insert the section A into the groove of BU cam.



Power Supply During Servicing

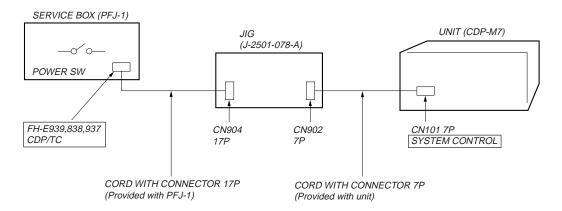
This unit is not able to operate on its own because it does not have its own power supply. During servicing, connect to other units.

Power is supplied when the **SYSTEM POWER** button of the amplifier (TA-M7) is turned ON.

If the other units are not available, use a service box (PFJ-1) and jig (J-2501-078-A).

In this case, press the button and TIME button and AOPEN/CLOSE button simultaneously to turn on the power.

[Connection Diagram]



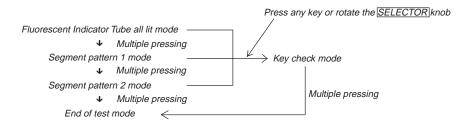
Fluorescent Indicator Tube/Key Check Mode

After turning on the power, press the button, <u>TIME</u> button, and <u>DISC 1</u> button simultaneously to perform the Fluorescent indicator tube check.

The steps of the Fluorescent Indicator Tube check mode will proceed onto the next one by the above multiple pressing.

During the Fluorescent Indicator Tube check mode, press any button or rotate the selector knob to set the key check mode.

To end the mode, press the above three buttons simultaneously.



Note 1) When the three buttons pressed to enter the Fluorescent Indicator Tube all lit mode are released together, the Fluorescent Indicator Tube all lit mode will remain on. When released separately, the key check mode will be set soon after the Fluorescent Indicator Tube all lit mode.

In "multiple pressing", if the three buttons are pressed and released together, the next mode will be set. If not, the key check mode will be set.

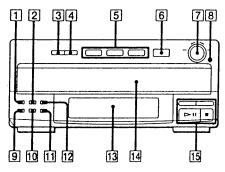
Note 2) In the key check mode, each time the button is pressed, the "KEY=" number on the Fluorescent indicator tube increases. When the SELECTOR knob is rotated, the "KEY=" number on the Fluorescent indicator tube increases in the + direction and decreases in the - direction.

SECTION 2 GENERAL

Index to Parts and Controls

Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

Front Panel

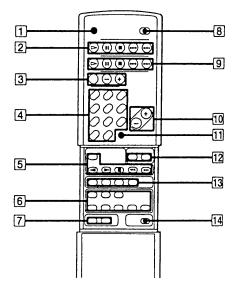


- 1 REPEAT button (10)
- 2 TIME button (7)
- 3 EX-CHANGE button (7)
- 4 SKIP (DISC SKIP) button (7, 15)
- 5 Disc tray (DISC 1 3) buttons (7, 15)
- 6 OPEN/CLOSE button (open/close of the disc tray) (7, 15)
- 7 SELECTOR control (8, 9)
- 8 ENTER button (9)
- 9 CONTINUE button (7 10)
- 10 SHUFFLE button (8)
- [1] PROGRAM button (9)
- 12 CLEAR button (9)
- 13 Display window (7, 9)
- 14 Disc tray (7)
- 15 CD player operating buttons
 - √ (manual search) (8)
 - ►¶ (play/pause) (7)
 - \blacksquare (stop) (7, 9)

- 1 CD status indication (7)
- 2 Music calendar (7)
- 3 Step/disc number/track number/ playing time indication (7, 9)

Remote

For further operation, refer to the pages in parentheses.



- 1 SLEEP button (25)
- 2 MD operating buttons
 - (play) (11)
 - II (pause) (11)
 - **(stop)** (11)
 - H◀/►► (AMS**) (11)
- 3 Tuner operating buttons (22)
 BAND button
 PRESET (+/-) buttons

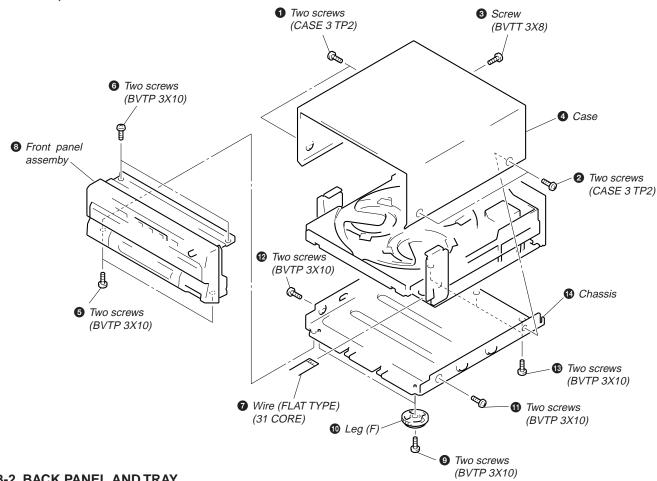
This section is extracted from instruction manual.

- 4 CD/Tuner/MD numeric buttons (8, 12, 23)
- 5 Tape operating buttons TAPE button
 - ✓ (reverse side play)
 - ➤ (front side play)
 - (stop)
 - ◄ (fast leftward)
 - ►► (fast rightward)
- 6 CD operating buttons CD button (8) REPEAT button (10) TIME button (7) DISC 1 – 3 buttons (7) CHECK button (9)
- CLEAR button (9)
 7 TUNER button
- DISPLAY button (23)

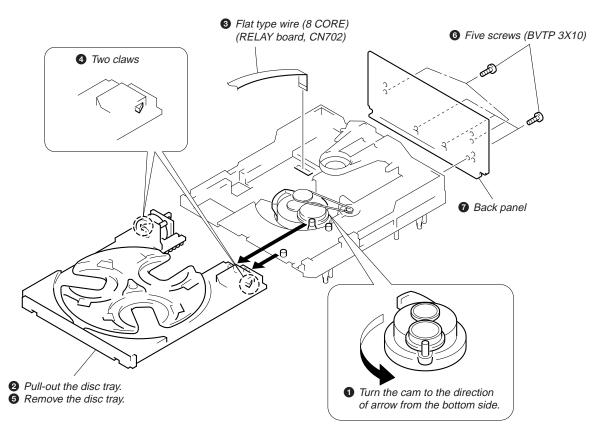
 8 SYSTEM POWER switch (7)
- 9 CD operating buttons (play) (7)
 - 11 (pause) (7)
 - **■** (stop) (7)
 - | (AMS**) (8)
- 10 VOLUME (+/-) buttons (7, 11, 24, 27)
- 11 MUTING button (24)
- VIDEO 1 button (28) VIDEO 2 button (28)
- 13 MD operating buttons REPEAT button (13) DISPLAY button (12) SCROLL button (21)
- 14 SOURCE DIRECT button (24)
- ** AMS: Automatic Music Sensor

SECTION 3 DISASSEMBLY

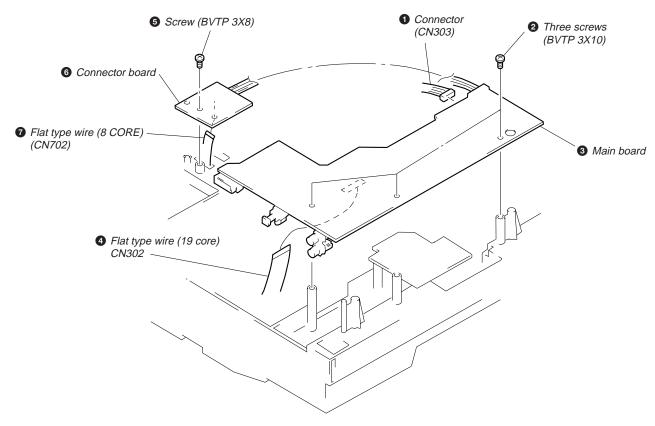
3-1. CASE, FRONT PANEL ASSEMBLY AND CHASSIS



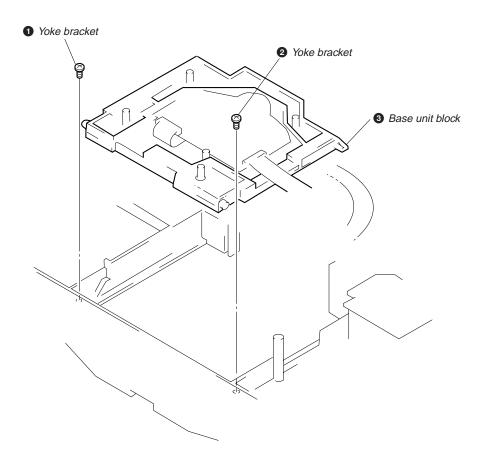
3-2. BACK PANEL AND TRAY



3-3. MAIN BOARD AND CONNECTOR BOARD



3-4. BASE UNIT

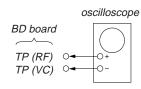


SECTION 4 ELECTRICAL ADJUSTMENTS

Note:

- 1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
- 2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
- 3. Use an oscilloscope with more than 10M impedance.
- Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
- 5. Adjust the focus bias adjustment when optical block is replaced.

Focus Bias Adjustment

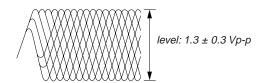


Procedure:

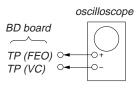
- 1. Connect oscilloscope to test point TP (RF) on BD board.
- 2. Turned Power switch on.
- 3. Put disc (YEDS-18) in and playback.
- Adjust RV101 so that the waveform is clear.
 (Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.)
- 5. After adjustment, check the RF signal level.

• RF signal

VOLT/DIV: 200 mV TIME/DIV: 500 nS



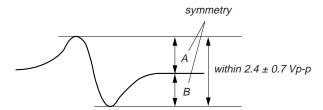
S Curve Check



Procedure:

- 1. Connect oscilloscope to test point TP (FEO) on BD board.
- 2. Connect between test point TP (FOK) and Ground by lead wire.
- 3. Turned Power switch on.
- 4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
- 5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4 ± 0.7 Vp-p.

S-curve waveform

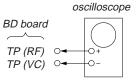


6. After check, remove the lead wire connected in step 2.

Note: • Try to measure several times to make sure than the ratio of A: B or B: A is more than 10: 7.

Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

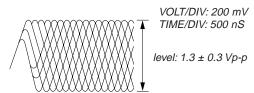


Procedure:

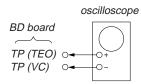
- 1. Connect oscilloscope to test point TP (RF) on BD board.
- 2. Turned Power switch on.
- 3. Put disc (YEDS-18) in and playback.
- Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note: Clear RF signal waveform means that the shape "\(\Q'' \) can be clearly distinguished at the center of the waveform.

RF signal waveform

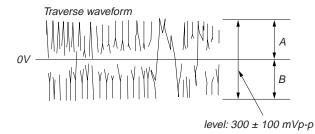


E-F Balance Check



Procedure:

- 1. Connect a lead wire to the test point TP501 on Display board.
- 2. Connect oscilloscpe to test point TP (TEO) on BD board.
- 3. Turned power switch on, load the disc (YEDS-18).
- 4. Connect a lead wire connected to the test point TP501 to ground.
- 5. Press the TIME button. (TRACKING SERVO OFF)
- 6. Playback the disc (YEDS-18).
- 7. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.



Specified level: • $\frac{A-B}{2(A+B)}$ x 100 = less than ± 7% • $A+B=300\pm100$ mVp-p

8. Remove the lead wire connected in step 1.

Focus/Tracking Gain Adjustment (RV102, RV103)

This gain has a margin, so even if it is slightly off.

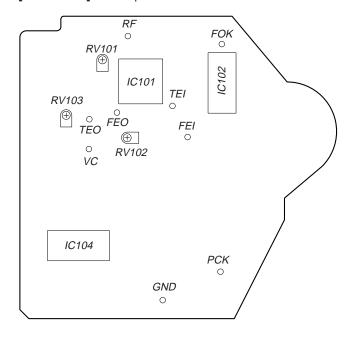
There is no problem.

Therfore, do not perform this adjustment.

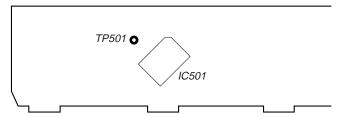
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location

[BD BOARD] — Component Side —

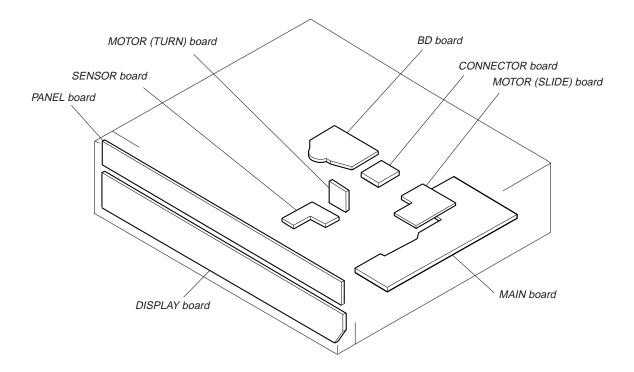


[DISPLAY BOARD] — Conductor Side —



SECTION 5 DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



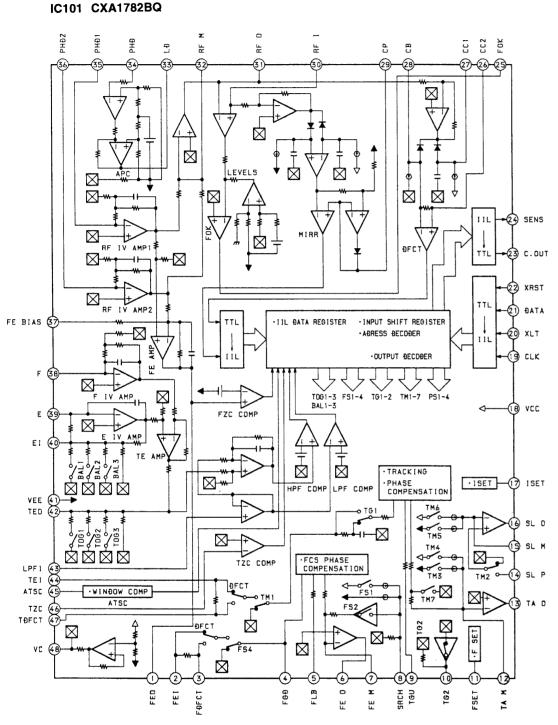
5-2. IC PIN FUNCTION

• IC501 SYSTEM CONTROL (µPD780205GF-016-3BA)

Pin No.	Pin Name	I/O	Function
1	V _{DD}	_	Power supply. (+5V)
2	PWMSW	I	Pulse width modulation select switch for turn table. (Not used)
3	DISC SENS	I	Slit sensor input of disc table. "L": None, "H": Load
4	TABLE R	О	Table motor control signal output.
5	TABLE L	О	Table inotor control signal output.
6	JOG1	I	Jog dial encoder input.
7	JOG0	I	Jog diai encoder input.
8	BD PWR	0	Power ON/OFF control signal output to BD block. "L": OFF, "H": ON
9	BD RST	0	Reset signal output to BD block. "L": Reset
10	RESET	I	System reset input. "L": Reset
11	X2	0	Main system clolek (5 MHz)
12	X1	I	Main system clolck. (5 MHz)
13	GND	_	Ground
14		_	Not used. (Open)
15	ADJ	I	Test pin. "L": Test mode
16	VDD	_	Power supply. (+5V)
17	CLOCK	0	Serial clock output to digital signal processor and D/A converter.
18	DATA	0	Serial data output to digital signal processor and D/A converter.
19	SENS	I	Each mode input from digital signal processor and D/A converter.
20	XLT	О	Serial data latch pulse output to digital signal processor and D/A converter.
21	PRGL	О	Serial data latch pulse output to digital filter.
22	SOCLK	О	Sub-code Q data read clock output to digital signal processor.
23		0	Not used. (Open)
24	SUBQ	I	Sub-code Q data serial input from Digital signal processor.
25	AVss	_	Ground (A/D converter)
26	FCSSW	О	Focus gain switching output. "L": Normal, "H": Down
27	A MUTE	О	Muting ON/OF control output. "H": Mute (Not used)
28	LOD OUT	О	Loading motor control signal output.
29	LOD IN	О	Louding motor control signal output.
30	OUT SW	I	Loading out detection signal input.
31 to 33	KEY3 to KEY1	I	Key input (A/D)
34	AVdd	_	Power supply (+5V) (A/D converter)
35	AVREF	_	Reference voltage input (+5V) (A/D converter)
36	SCOR	I	Sub-code sync detection input.
37	TABLE SENS	I	Table address detection sensor input.
38	BUS OUT	О	Audio bus signal ouput.
39	BUS IN	I	Audio bus signal input.
40	Vss	_	Ground

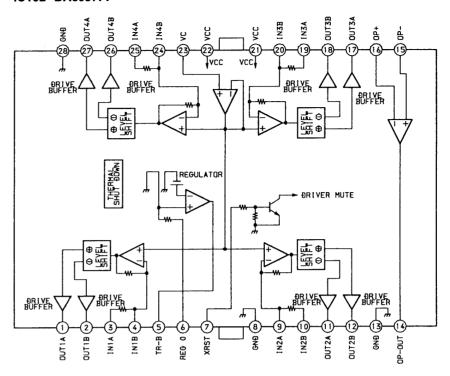
Pin No.	Pin Name	I/O	Function								
41	LED JOG	О	LED drive signal output.								
42	LED ENT	О	Disctray address detect encoder input.								
43 to 45	E3 to E1	I	Disctray address detect encoder input.								
46	Vdd	_	Power supply (+5V)								
47 to 49	LED DP3 to LED DP1	О	LED I I								
50 to 52	DE3 to DE1	О	LED drive signal output.								
53 to 78	P35 to P10	О	Fluorescent indicator tube segment output.								
79	V LOAD	_	Power supply for Fluorescent indicator tube. (–30V)								
80 to 88	P9 to P1	О	Fluorescent indicator tube segment output.								
89 to 100	12G to 1G	О	Fluorescet indicator tube grid output.								

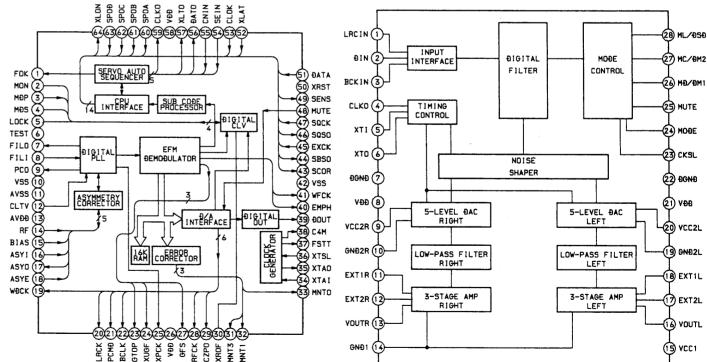
5-3. IC BLOCK DIAGRAMS — BD SECTION —



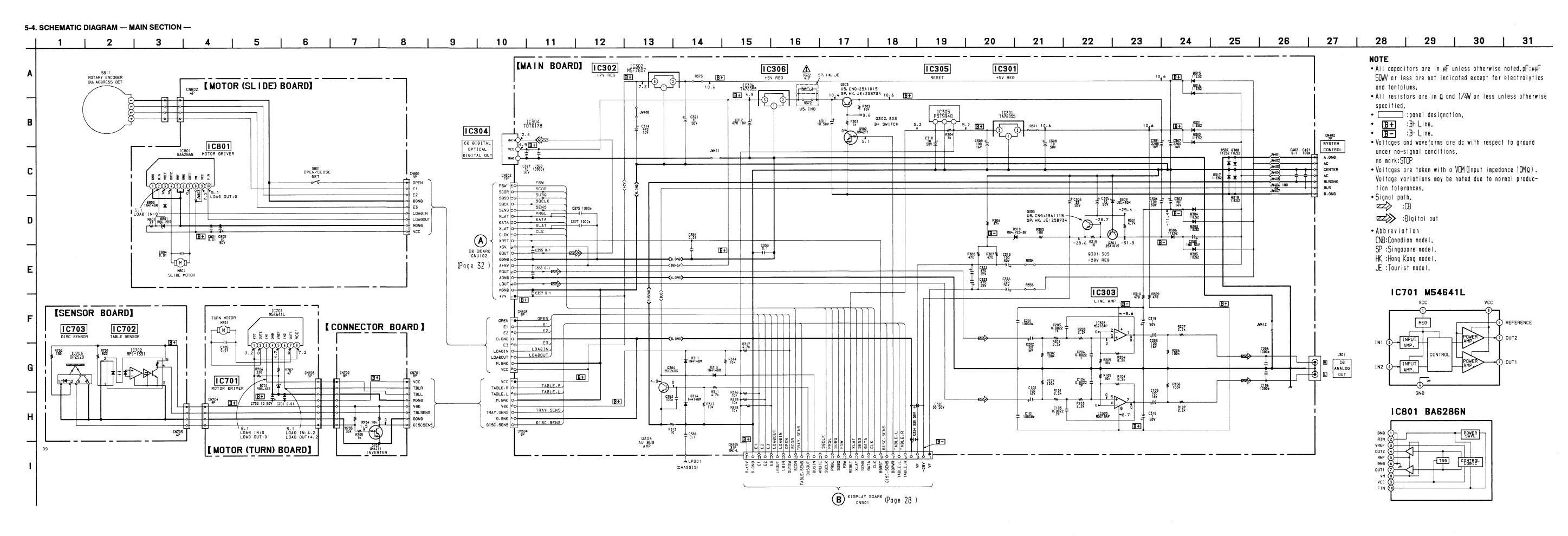
IC102 BA6397FP

IC103 CXD2507



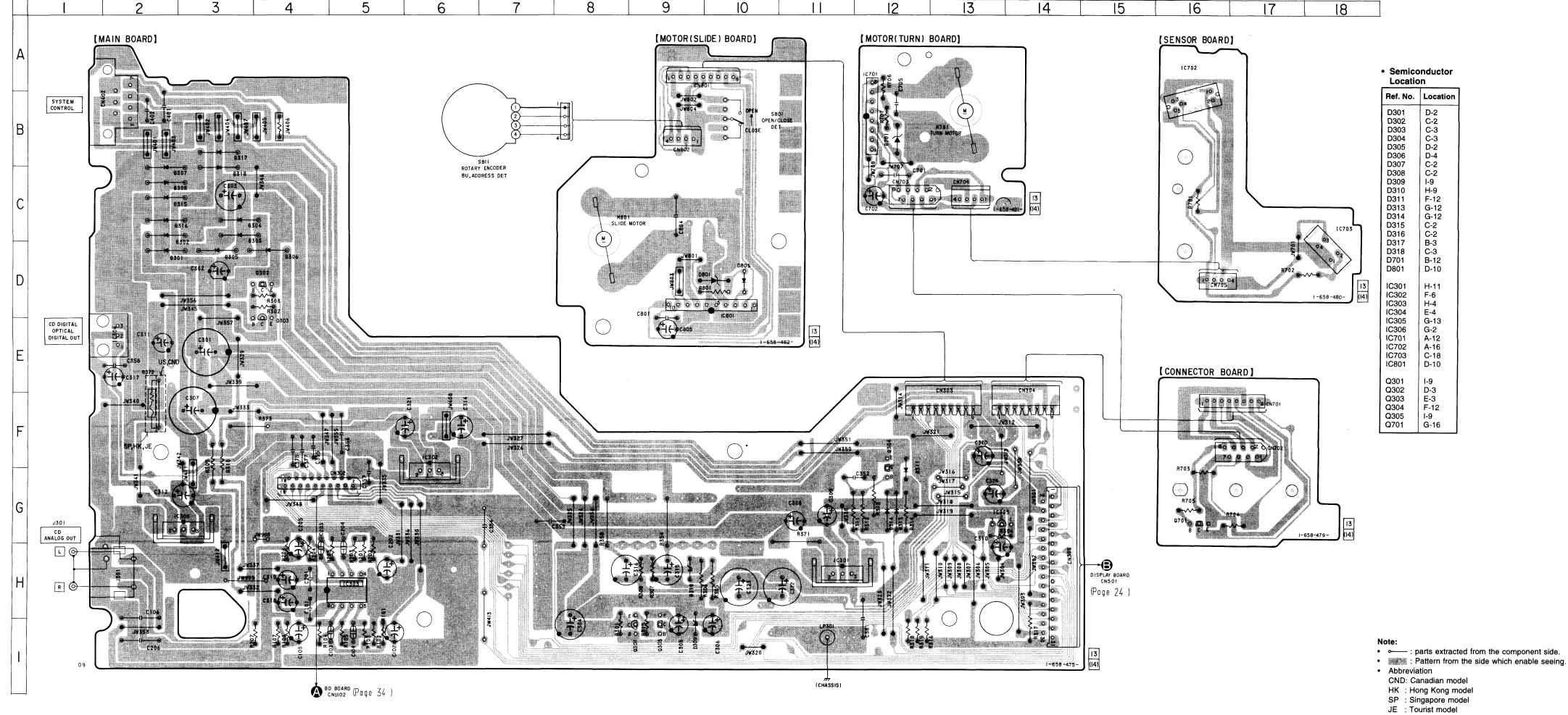


IC104 PCM1710U



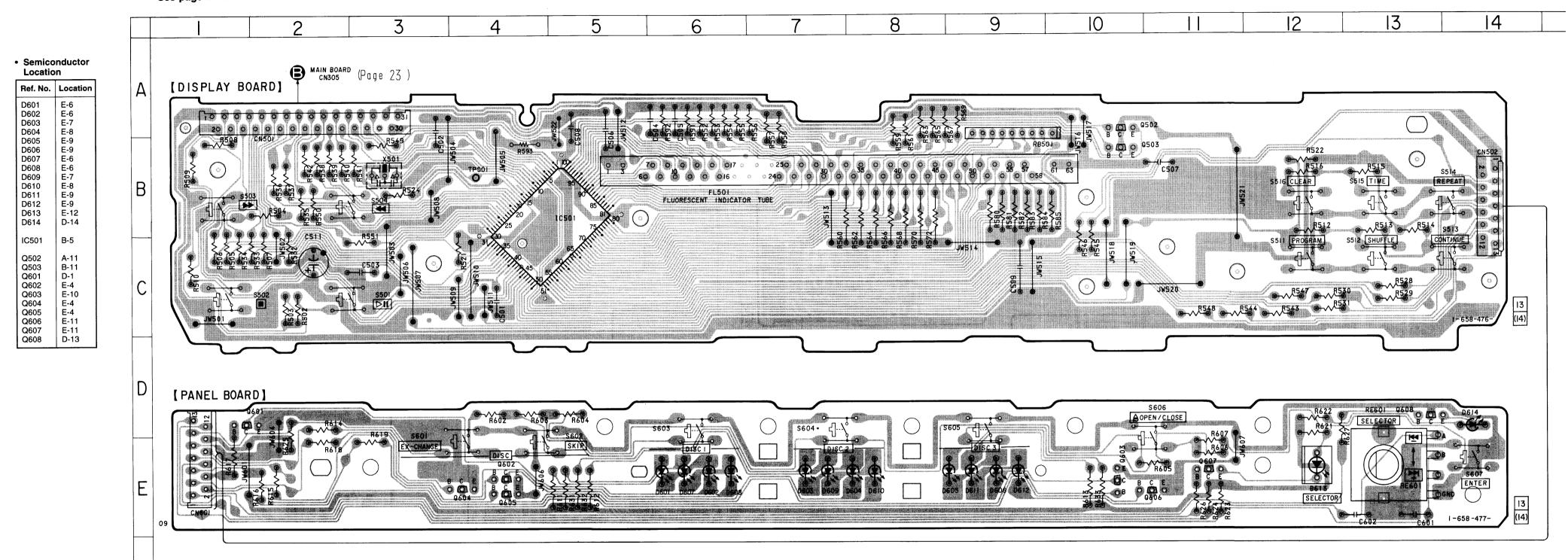
— 17 —

--- 19 ---



5-6. PRINTED WIRING BOARD — PANEL SECTION —

• See page 11 for Circuit Boards Location.



Note

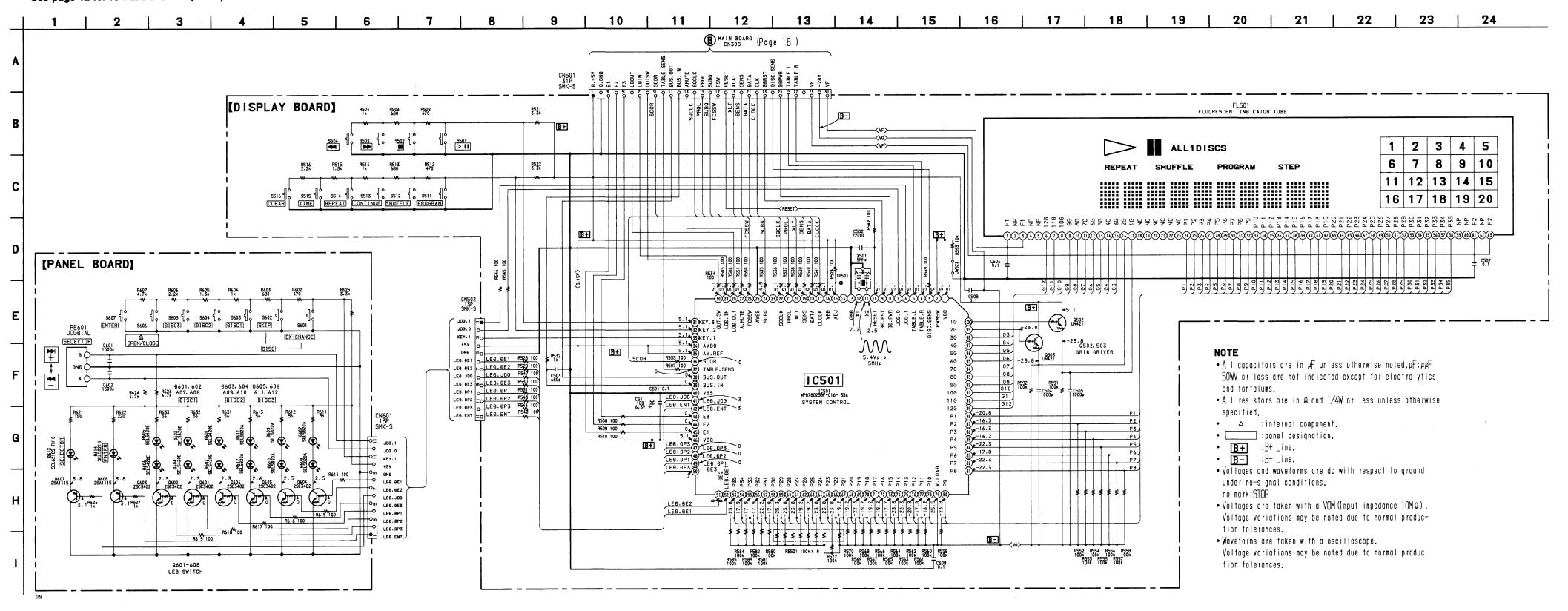
• • ---: parts extracted from the component side.

Δ : internal component.

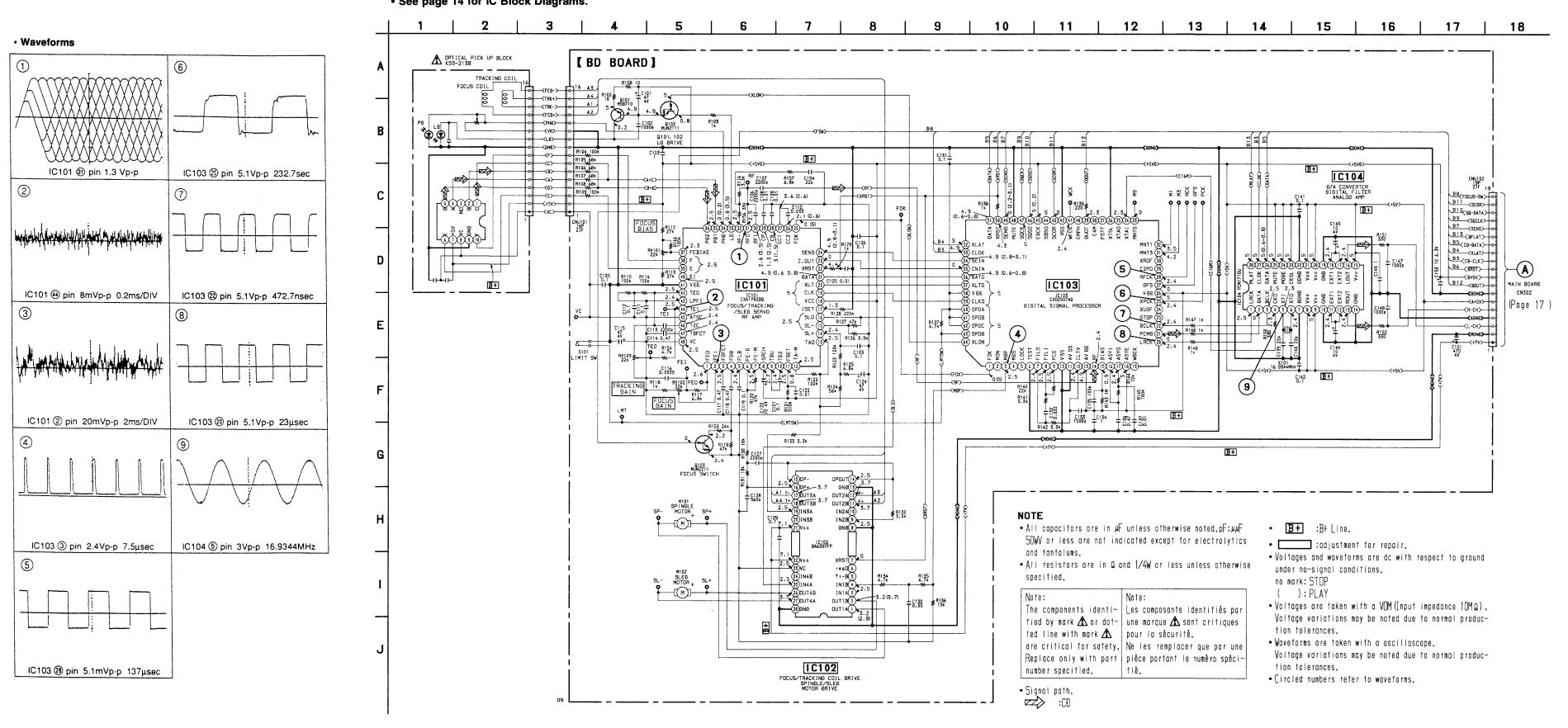
• Pattern from the side which enable seeing.

5-7. SCHEMATIC DIAGRAM — PANEL SECTION —

• See page 12 for IC Pin Function. (IC501)

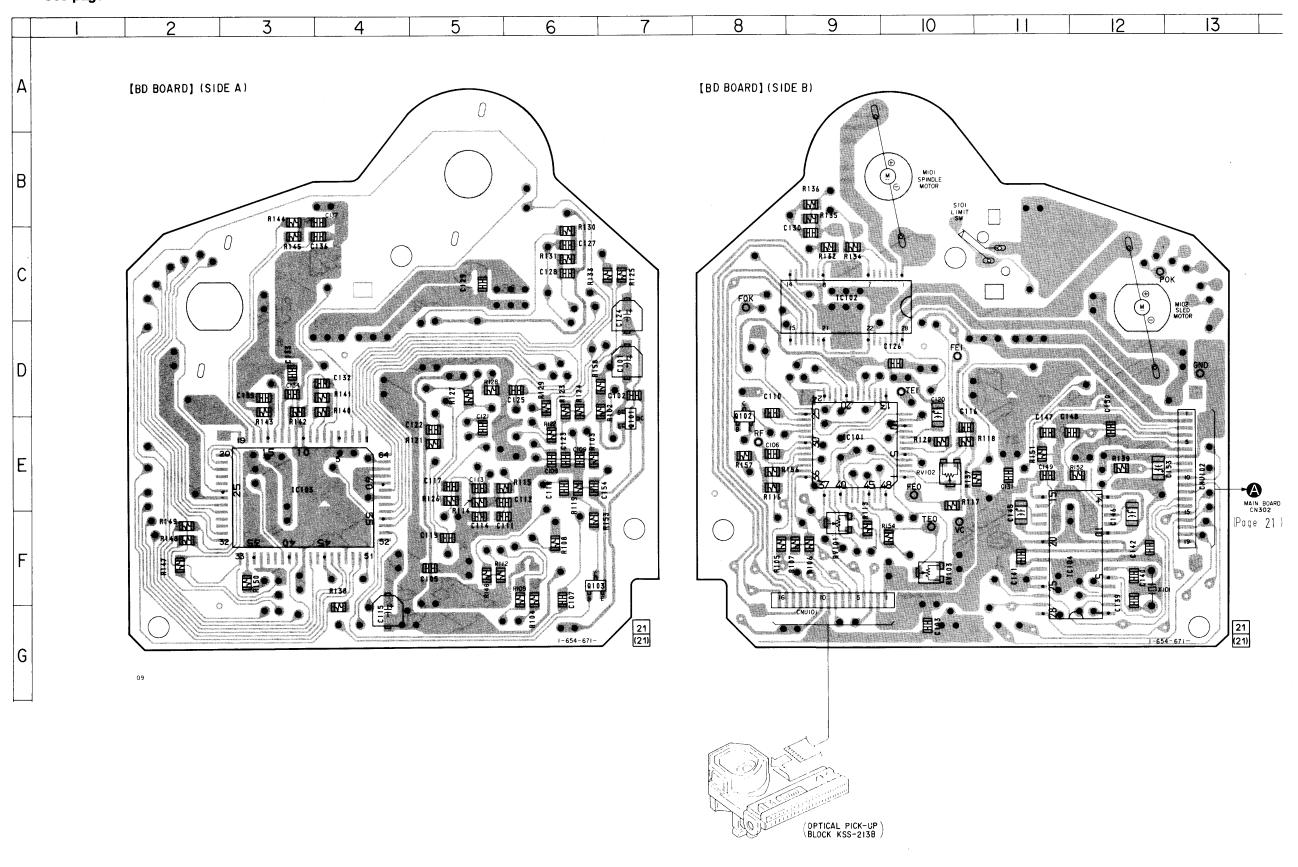


5-8. SCHEMATIC DIAGRAM — BD SECTION — • See page 14 for IC Block Diagrams.



5-9. PRINTED WIRING BOARD — BD SECTION —

• See page 11 for Circuit Boards Location.



Semiconductor

Locatio)T1
Ref. No.	Location
IC101	E-9
IC102	C-9
IC103	E-3
IC104	F-11
Q101	D-7
Q102	D-8
Q103	F-6

Note:

- : Through hole.
 : Pattern from the side which enable seeing. (The other layers' potterns are not indicated.)

SECTION 6 EXPLODED VIEWS

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- · Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

Abbreviation

CND: Canadian model HK : Hong Kong model : Singapore model : Tourist model

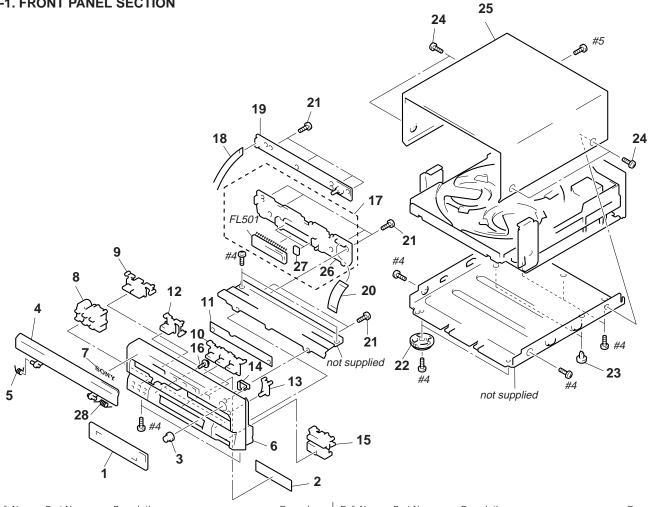
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque A sont critiques pour la sécurité.

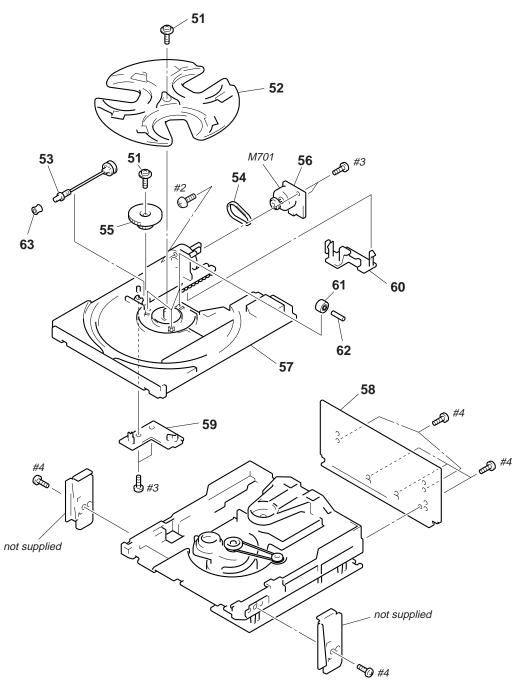
Ne les remplacer que par une piéce portant le numéro spécifié.

6-1. FRONT PANEL SECTION



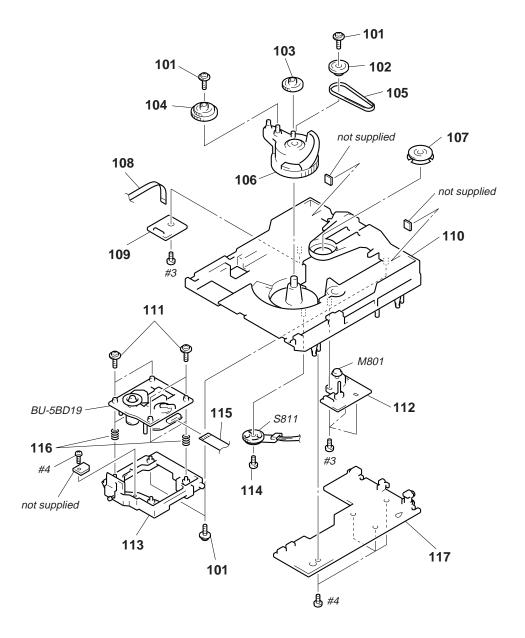
Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>	Ref. No.	Part No.	Description	Remark
1	4-977-683-01	WINDOW (FL)		* 17	A-4673-994-A	DISPLAY BOARD, COMPLETE (SP,HI	K,JE)
2	4-979-352-01	FILTER (CD)		* 17	A-4673-998-A	DISPLAY BOARD, COMPLETE (US,C	ND)
3	4-977-680-01	KNOB (JOG)		18	1-776-044-11	WIRE (FLAT TYPE)(13 CORE)	
4	4-977-682-01	LID (LOADING)		* 19	A-4673-995-A	PANEL BOARD, COMPLETE (SP,HK,	JE)
5	4-979-212-01	SPRING (LID-L)					
				19	A-4673-999-A	PANEL BOARD, COMPLETE (US,CNI))
6	4-977-681-01	PANEL, FRONT		20	1-776-043-11	WIRE (FLAT TYPE)(31 CORE)	
7	4-962-708-01	EMBLEM (4-A), SONY		21	4-951-620-01	SCREW (2.6X8), +BVTP	
8	4-977-685-01	BUTTON (MODE)		22	4-977-699-11	LEG (F)	
9	4-977-687-01	BUTTON (SKIP)		23	4-965-822-01	FOOT	
10	4-977-686-01	BUTTON (CD-3)					
				24	3-363-099-01	SCREW (CASE 3 TP2)	
11	4-977-691-01	ILLUMINATOR (CD-3)		25	4-977-698-11	CASE	
12	4-977-688-01	BUTTON (EJECT)		* 26	4-977-695-01	HOLDER (FL)	
13	X-4946-467-1	BUTTON (ENTER) ASSY		* 27	4-955-901-01	CUSHION (FL)	
* 14	4-977-690-01	INDICATOR (JOG)		28	4-979-211-01	SPRING (LID-R)	
15	4-977-684-01	BUTTON (PLAY)					
				FL501	1-517-462-11	INDICATOR TUBE, FLUORESCENT	
16	4-933-134-01	SCREW (+PTPWH M2.6X6)					

6-2. BACK PANEL AND DISC TABLE SECTION



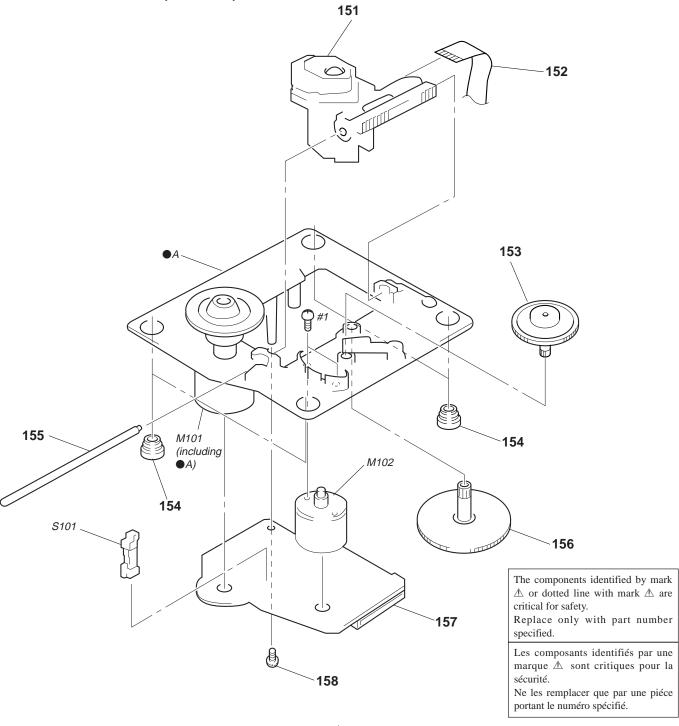
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	<u>Description</u>	Remark
51	4-917-583-21	BRACKET, YOKE		* 58	4-977-697-21	PANEL, BACK (US,CND)	
52	4-977-945-01	TRAY (TURN)		* 59	1-658-480-11	SENSOR BOARD	
53	X-4946-295-2	SHAFT ASSY, WORM					
54	4-977-943-01	BELT (TURN)(1.2)		60	4-977-941-01	BEARING (WORM)	
55	4-977-956-01	WHEEL, WORM		61	X-4924-457-1	ROLLER ASSY	
				62	4-934-376-01	SHAFT (ROLLER)	
* 56	1-658-481-11	MOTOR (TURN) BOARD		63	4-981-187-01	COLLAR (WORM)	
57	4-977-944-01	TRAY (SLIDE)		M701	A-4660-586-A	MOTOR ASSY (TURN)	
* 58	4-977-697-11	PANEL, BACK (SP.HK.JE)					

6-3. MECHANISM DICK SECTION (CDM38A-5BD19)



Ref. No.	Part No.	Description	<u>Remark</u>	Ref. No.	Part No.	Description	<u>Remark</u>
101	4-917-583-21	BRACKET, YOKE		111	4-933-134-01	SCREW (+PTPWH M2.6X6)	
102	4-977-954-01	PULLEY (SL)		* 112	1-658-482-11	MOTOR (SLIDE) BOARD	
103	4-977-953-01	GEAR (SL-A)		113	X-4946-296-1	HOLDER (BU) ASSY	
104	4-977-955-01	GEAR (SL-B)		114	4-951-620-41	SCREW (2.6), +BVTP	
105	4-977-942-01	BELT (SL)(1.4)		115	1-775-173-11	WIRE (FLAT TYPE)(19 CORE)	
106	X-4946-491-1	CAM ASSY, BU		116	4-982-447-01	SPRING (BU), COMPRESSION	
107	1-452-538-11	MAGNET		* 117	A-4673-993-A	MAIN BOARD, COMPLETE (SP,HK,JE)	
108	1-776-042-11	WIRE (FLAT TYPE)(8 CORE)		* 117	A-4673-997-A	MAIN BOARD, COMPLETE (US,CND)	
* 109	1-658-479-11	CONNECTOR BOARD		M801	A-4660-926-A	MOTOR (CDM) ASSY (SLIDE)	
* 110	X-4946-498-1	CHASSIS (CDM) ASSY		S811	1-473-335-11	ENCODER, ROTARY (BU. TRAY ADDR	ESS DET)

6-4. BASE UNIT SECTION (BU-5BD19)



Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>	<u>Remark</u>
△ 151	8-848-367-11	OPTICAL PICK-UP KSS-213B/K-N		157	A-4673-402-A	BD BOARD, COMPLETE	
152	1-769-069-11	WIRE (FLAT TYPE)(16 CORE)		158	4-951-620-41	SCREW (2.6), +BVTP	
153	4-917-567-01	GEAR (M)		M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
154	4-951-940-01	INSULATOR (BU)		M102	X-4917-504-1	MOTOR ASSY (SLED)	
155	4-917-565-01	SHAFT, SLED					
				S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
156	4-917-564-01	GEAR (P), FLATNESS					

SECTION 7 ELECTRICAL PARTS LIST

Note:

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS

All resistors are in ohms METAL: Metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F : nonflammable
• SEMICONDUCTORS

In each case, u: $\boldsymbol{\mu}$, for example:

 $uA...: \mu\ A...,\ uPA...: \mu\ PA...,\ uPB...: \mu\ PB....$

 $uPC...: \mu\ PC...,\ uPD...: \mu\ PD...$

- CAPACITORS uF: µF
- COILS uH: µH
- Abbreviation

CND: Canadian model
HK: Hong Kong model
SP: Singapore model
JE: Tourist model

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
		<u> </u>	N ETE						0005	F0/	
Ψ.	A-4673-402-A	BD BOARD, COMP				C139		CERAMIC CHIP	22PF	5%	50V
		*****	****			C140		CERAMIC CHIP	22PF	5%	50V
		CADACITOD				C141		CERAMIC CHIP	0.1uF		25V
		< CAPACITOR >				C142	1-103-038-91	CERAMIC CHIP	0.1uF		25V
C101	1-126-607-11	ELECT CHIP	47uF	20%	4V	C145		TANTALUM CHIP	10uF	20%	4V
C102	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	C146	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C103	1-164-346-11	CERAMIC CHIP	1uF		16V	C147		CERAMIC CHIP	0.001uF	5%	50V
C105	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C148		CERAMIC CHIP	0.001uF	5%	50V
C106	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V	C149	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V	C153	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V						
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V			< CONNECTOR >			
C111	1-163-038-91	CERAMIC CHIP	0.1uF		25V						
								CONNECTOR, FFC			
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V	CNU102	1-770-013-11	CONNECTOR, FFC	/FPC 19P		
C113	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V						
C114		CERAMIC CHIP	0.47uF		25V			< IC >			
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V						
C116	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V	IC101		IC CXA1782BQ			
						IC102		IC BA6397FP			
C117	1-164-005-11	CERAMIC CHIP	0.47uF		25V	IC103		IC CXD2507AQ			
C118	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	IC104	8-759-185-29	IC PCM1710U-B			
C119	1-163-038-91	CERAMIC CHIP	0.1uF		25V						
C120			10uF	20%	4V			< TRANSISTOR >			
C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V	0404	0.700.040.00	TDANICICTOD AA	2D740 D		
0100	1 1/4 000 11	OEDAMIO OLIID	0.015		F0\/	Q101		TRANSISTOR MS			
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V	Q102		TRANSISTOR UN			
C123	1-163-038-91	CERAMIC CHIP	0.1uF	2007	25V	Q103	8-729-421-22	TRANSISTOR UN	12211		
C124 C125	1-126-607-11 1-164-232-11	ELECT CHIP CERAMIC CHIP	47uF 0.01uF	20%	4V 50V			< RESISTOR >			
C125		CERAMIC CHIP	0.01uF 0.1uF		25V			< RESISTUR >			
C120	1-103-030-71	CERAIVIIC CHIF	U. Tul		23 V	R102	1-216-001-00	METAL CLID	10	5%	1/10W
C127	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V	R102		METAL GLAZE	1K	5%	1/10W
C127	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	R104		METAL GLAZE	100K	5%	1/10W
C129	1-163-133-00	CERAMIC CHIP	0.1uF	370	25V	R105		METAL CHIP	68K	5%	1/10W
C130	1-164-336-11	CERAMIC CHIP	0.33uF		25V	R106	1-216-073-00		68K	5%	1/10W
C131	1-163-038-91	CERAMIC CHIP	0.33di 0.1uF		25V	1000	1 210 075 00	WEINE OIIII	OOK	370	171000
0101	1 100 000 71	OLIGINIO OTIII	o. rui		201	R107	1-216-093-00	METAL CHIP	68K	5%	1/10W
C132	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	R108	1-216-093-00		68K	5%	1/10W
C133	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V	R109		METAL GLAZE	100K	5%	1/10W
C134		CERAMIC CHIP	1uF		16V	R112	1-216-083-00		27K	5%	1/10W
C135	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	R113	1-216-083-00		27K	5%	1/10W
C136	1-164-005-11		0.47uF		25V						
						R114	1-216-101-00	METAL CHIP	150K	5%	1/10W
C137	1-164-232-11	CERAMIC CHIP	0.01uF		50V	R115	1-216-101-00		150K	5%	1/10W
						'					

BD DISPLAY

Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>	Ref. No.	Part No.	<u>Description</u>			Remark	
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W			< VIBRATOR >				
R117	1-216-069-00		6.8K	5%	1/10W							
R118		METAL GLAZE	1K	5%	1/10W	X101	1-579-280-11	VIBRATOR, CRYST	AL (16.9344	1MHz)		
										•		
R119	1-216-089-91	METAL GLAZE	47K	5%	1/10W							
R120	1-216-089-91	METAL GLAZE	47K	5%	1/10W	*******	*******	*********	******	*****	*****	
R121	1-216-114-00	METAL GLAZE	510K	5%	1/10W							
R122	1-216-097-91	METAL GLAZE	100K	5%	1/10W	*	A-4673-994-A	DISPLAY BOARD,			,	
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W			******	******	*****	****	
						*	A-4673-998-A	DISPLAY BOARD,			,	
R124	1-216-091-00	METAL CHIP	56K	5%	1/10W			*******	*******	*****	**	
R125	1-216-069-00		6.8K	5%	1/10W							
R126		METAL GLAZE	3.9K	5%	1/10W	*	4-955-901-01	` '				
R127		METAL GLAZE	47K	5%	1/10W	*	4-977-695-01	HOLDER (FL)				
R128	1-216-105-91	METAL GLAZE	220K	5%	1/10W			OADAOITOD				
								< CAPACITOR >				
R129		METAL GLAZE	1K	5%	1/10W	0501	1 1/4 150 11	OFDANIO	0.1		E01/	
R130	1-216-079-00		18K	5%	1/10W	C501	1-164-159-11		0.1uF	200/	50V	
R131	1-216-079-00		18K	5%	1/10W	C502	1-162-302-11		0.0022uF	30%	16V	
R132	1-216-061-00		3.3K	5%	1/10W	C503	1-162-292-31		680PF	10%	50V	
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	C504	1-162-294-31		0.001uF	10%	50V	
D404	4 04 (0 (5 0 0	NASTAL OLUB	4.717	E0/	4/4014/	C505	1-162-294-31	CERAIVIIC	0.001uF	10%	50V	
R134	1-216-065-00		4.7K	5%	1/10W	CEO/	1 1/4 150 11	CEDANAIC	0.1Γ		F0\/	
R135	1-216-065-00		4.7K	5%	1/10W	C506 C507	1-164-159-11 1-164-159-11		0.1uF 0.1uF		50V 50V	
R136	1-216-073-00		10K	5%	1/10W	C507	1-164-159-11		0.1uF 0.1uF		50V 50V	
R137	1-216-065-00		4.7K	5%	1/10W	C508						
R138	1-216-049-91	METAL GLAZE	1K	5%	1/10W	C509 C511	1-164-159-11 1-126-177-11		0.1uF 100uF	20%	50V 10V	
D120	1 21/ 022 00	METAL CLUD	220	Ε0/	1/10/1/	Coll	1-120-1/7-11	ELECT	TOOUF	20%	100	
R139	1-216-033-00		220	5%	1/10W			< CONNECTOR >				
R140 R141	1-216-081-00 1-216-061-00		22K 3.3K	5% 5%	1/10W 1/10W			< CONNECTOR >				
R141 R142	1-216-061-00		3.3K 3.3K	5% 5%	1/10W	* CN501	1-568-8/15-11	SOCKET, CONNECT	TOR 31P			
R142 R143		METAL CHIP	3.3N 1M	5%	1/10W	* CN502		SOCKET, CONNECT				
K143	1-210-121-91	IVIL TAL GLAZE	TIVI	370	1/1000	014302	1 300 032 11	SOURLY, CONTREC	1010 131			
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W			< FILTER >				
R145		METAL GLAZE	100K	5%	1/10W							
R146		METAL GLAZE	100K	5%	1/10W	FL501	1-517-462-11	INDICATOR TUBE,	FLUORESCE	ENT		
R147		METAL GLAZE	1K	5%	1/10W							
R148		METAL GLAZE	1K	5%	1/10W			< IC >				
R149	1-216-049-91	METAL GLAZE	1K	5%	1/10W	IC501	8-759-377-67	IC uPD780205GF	-016-3BA			
R150	1-216-037-00	METAL CHIP	330	5%	1/10W							
R151	1-216-037-00	METAL CHIP	330	5%	1/10W			< TRANSISTOR >				
R152	1-216-037-00	METAL CHIP	330	5%	1/10W							
R153	1-216-082-00	METAL GLAZE	24K	5%	1/10W	Q502		TRANSISTOR DT				
						Q503	8-729-900-80	TRANSISTOR DT	C114ES			
R154	1-216-065-00	METAL CHIP	4.7K	5%	1/10W							
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W			< RESISTOR >				
R157	1-216-069-00		6.8K	5%	1/10W							
R158	1-216-001-00	METAL CHIP	10	5%	1/10W	R502	1-249-413-11		470	5%	1/4W	
						R503	1-249-415-11		680	5%	1/4W	
		< VARIABLE RESIS	STOR >			R504	1-249-417-11		1K	5%	1/4W	F
						R505	1-247-807-31		100	5%	1/4W	
RV101		RES, ADJ, METAL				R506	1-247-807-31	CARBON	100	5%	1/4W	
RV102		RES, ADJ, METAL				D===	4 0 47 007 5	CARRON	400	F0/	41	
RV103	1-241-396-11	RES, ADJ, METAL	GLAZE 22K			R507	1-247-807-31		100	5%	1/4W	
						R508	1-247-807-31		100	5%	1/4W	
		< SWITCH >				R509	1-247-807-31		100	5%	1/4W	
		01411761111				R510	1-247-807-31		100	5%	1/4W	г
S101	1-572-085-11	SWITCH, LEAF (LI	MII)			R512	1-249-413-11	CAKBON	470	5%	1/4W	ŀ
						DE12	1 2/0 /15 11	CADDON	600	E0/	1//\/	E
						R513	1-249-415-11	CARDUN	680	5%	1/4W	Г

DISPLAY MAIN

5.6.11	5	5					D-f N-	Dt N-	December			Damanla
Ref. No.	Part No.	<u>Description</u>			Remark		Ref. No.	<u>Part No.</u>	<u>Description</u>			Remark
R514	1-249-417-11	CARBON	1K	5%	1/4W	F	R582	1-249-441-11	CARBON	100K	5%	1/4W
R515	1-247-834-11	CARBON	1.3K	5%	1/4W		R583	1-249-441-11	CARBON	100K	5%	1/4W
R516	1-249-421-11	CARBON	2.2K	5%	1/4W	F						
R521	1-249-423-11	CARBON	3.3K	5%	1/4W	F	R584	1-249-441-11	CARBON	100K	5%	1/4W
							R585	1-249-441-11		100K	5%	1/4W
R522	1-249-423-11	CARRON	3.3K	5%	1/4W	F	R591	1-249-441-11		100K	5%	1/4W
R524	1-249-429-11	CARBON	10K	5%	1/4W		R592	1-249-441-11		100K	5%	1/4W
R528		CARBON	100	5%	1/4W		R593				5%	
	1-247-807-31						K593	1-249-429-11	CARBON	10K	5%	1/4W
R529	1-247-807-31		100	5%	1/4W						01/	
R530	1-247-807-31	CARBON	100	5%	1/4W				< CONPOSITION C	IRCUIT BLO	CK >	
R531	1-247-807-31		100	5%	1/4W		RB501	1-233-140-11	COMPOSITION CII	RCUIT BLOC	K	
R532	1-249-417-11	CARBON	1K	5%	1/4W	F						
R533	1-247-807-31	CARBON	100	5%	1/4W				< SWITCH >			
R534	1-247-807-31	CARBON	100	5%	1/4W							
R535	1-247-807-31	CARBON	100	5%	1/4W		S501	1-554-303-21	SWITCH, TACTILE			
							S502	1-554-303-21	SWITCH, TACTILE	(I)		
R536	1-247-807-31	CARBON	100	5%	1/4W		S503		SWITCH, TACTILE			
R537	1-247-807-31		100	5%	1/4W		S504		SWITCH, TACTILE			
R538		CARBON	100	5%	1/4W		S511		SWITCH, TACTILE	` /)	
R539	1-247-807-31		100	5%	1/4W		3311	1-334-303-21	SWITCH, IACTILL	(I KOOKAWI)	
R540							CE10	1 554 202 21	CMITCH TACTILE	(CIIIIEEI E)		
K540	1-247-807-31	CARBUN	100	5%	1/4W		S512		SWITCH, TACTILE	. ,		
55.44		0.100011	400	=0.			S513		SWITCH, TACTILE)	
R541	1-247-807-31		100	5%	1/4W		S514		SWITCH, TACTILE	,		
R542	1-247-807-31		100	5%	1/4W		S515		SWITCH, TACTILE	. ,		
R543		CARBON	100	5%	1/4W		S516	1-554-303-21	SWITCH, TACTILE	(CLEAR)		
R544	1-247-807-31	CARBON	100	5%	1/4W							
R545	1-247-807-31	CARBON	100	5%	1/4W				< VIBRATOR >			
R546	1-247-807-31		100	5%	1/4W		X501	1-579-233-11	VIBRATOR, CERAN	MIC (5MHz)		
R547	1-247-807-31		100	5%	1/4W							
R548	1-247-807-31	CARBON	100	5%	1/4W							
R549	1-247-807-31	CARBON	100	5%	1/4W		*******	**********	******	******	*****	******
R550	1-247-807-31	CARBON	100	5%	1/4W							
							*	A-4673-993-A	MAIN BOARD, CO	MPLETE (SF	P,HK,JE)	
R551	1-247-807-31	CARBON	100	5%	1/4W				******	******	*****	*
R552	1-249-441-11	CARBON	100K	5%	1/4W		*	A-4673-997-A	MAIN BOARD, CO	MPLETE (US	S.CND)	
R553	1-249-441-11	CARBON	100K	5%	1/4W				******			
R554		CARBON	100K	5%	1/4W							
R555	1-249-441-11		100K	5%	1/4W			7_685_871_01	SCREW +BVTT 3	X6 (S)		
11000	1 2 7 7 7 7 1 1 1	OTTEDOT	10010	370	17-100			7 003 071 01	SOREW IDVIT S	λο (5)		
R556	1-249-441-11	CARBON	100K	5%	1/4W				< CAPACITOR >			
R557	1-249-441-11	CARBON	100K	5%	1/4W							
R558	1-249-441-11	CARBON	100K	5%	1/4W		C101	1-162-306-11	CERAMIC	0.01uF	30%	16V
R559	1-249-441-11	CARBON	100K	5%	1/4W		C102	1-126-933-11		100uF	20%	16V
R560	1-249-441-11		100K	5%	1/4W		C102	1-130-475-00		0.0022uF	5%	50V
KSOU	1-249-441-11	CARDUN	TOOK	370	1/4 VV							
DE / 1	1 040 441 11	CADDON	1001/	E0/	1/4\4/		C104	1-130-475-00		0.0022uF	5%	50V
R561	1-249-441-11	CARBON	100K	5%	1/4W		C105	1-126-933-11	ELECT	100uF	20%	16V
R562	1-249-441-11	CARBON	100K	5%	1/4W							
R563	1-249-441-11	CARBON	100K	5%	1/4W		C106	1-162-294-31		0.001uF	10%	50V
R564	1-249-441-11	CARBON	100K	5%	1/4W		C201	1-162-306-11	CERAMIC	0.01uF	30%	16V
R565	1-249-441-11	CARBON	100K	5%	1/4W		C202	1-126-933-11	ELECT	100uF	20%	16V
							C203	1-130-475-00	MYLAR	0.0022uF	5%	50V
R566	1-249-441-11	CARBON	100K	5%	1/4W		C204	1-130-475-00	MYLAR	0.0022uF	5%	50V
R567	1-249-441-11	CARBON	100K	5%	1/4W						-	
R568	1-249-441-11	CARBON	100K	5%	1/4W		C205	1-126-933-11	FLECT	100uF	20%	16V
R569	1-249-441-11	CARBON	100K	5%	1/4W		C205	1-162-294-31		0.001uF	10%	50V
R570		CARBON		5%	1/4W		C301	1-102-294-31		2200uF	20%	16V
NOTU	1-249-441-11	CAUDON	100K	5 70	1/4VV							
DE70	1 240 441 44	CADDON	1001/	F0/	1/414/		C302	1-126-933-11		100uF	20%	16V
R572	1-249-441-11	CARBON	100K	5%	1/4W		C303	1-126-968-11	ELECI	100uF	20%	50V
R580	1-249-441-11	CARBON	100K	5%	1/4W				5, 507	405 -		
R581	1-249-441-11	CARBON	100K	5%	1/4W		C304	1-126-968-11	ELECT	100uF	20%	50V

MAIN

Ref. No.	Part No.	<u>Description</u>			<u>Remark</u>	Ref. No.	Part No.	Description			Remark	
C305	1-126-964-11	ELECT	10uF	20%	50V	D315	8-719-200-82	DIODE 11ES2	2			
C306	1-126-966-11	ELECT	33uF	20%	50V	D316	8-719-200-82	DIODE 11ES2	2			
C307	1-126-768-11	ELECT	2200uF	20%	16V	D317	8-719-200-82	DIODE 11ES2	2			
C308	1-126-964-11		10uF	20%	50V							
						D318	8-719-200-82	DIODE 11ES2	2			
C309	1-126-933-11	ELECT	100uF	20%	16V							
C310	1-126-964-11	ELECT	10uF	20%	50V			< IC >				
C311	1-126-964-11		10uF	20%	50V							
C312	1-126-925-11	ELECT	470uF	20%	10V	IC301	8-759-231-53	IC TA7805S				
C314	1-126-925-11	ELECT	470uF	20%	10V	IC302	8-759-604-86	IC M5F7807L				
						IC303	8-759-634-51	IC M5218AP				
C315	1-126-968-11	ELECT	100uF	20%	50V	IC304	8-749-923-04	IC TOTX178				
C316	1-126-968-11	ELECT	100uF	20%	50V			(CD DIGITAL C	PTICAL, DIGITA	AL OUT)		
C317	1-126-964-11	ELECT	10uF	20%	50V							
C318	1-124-903-11	ELECT	1uF	20%	50V	IC305	8-759-256-72	IC PST994D				
C319	1-124-903-11	ELECT	1uF	20%	50V	IC306	8-759-231-53	IC TA7805S				
C320	1-126-966-11	ELECT	33uF	20%	50V			< JACK >				
C321	1-126-964-11	ELECT	10uF	20%	50V							
C322	1-126-941-11	ELECT	470uF	20%	25V	J301	1-770-272-11	JACK, PIN 2P	(CD,ANALOG O	UT)		
C323	1-126-941-11	ELECT	470uF	20%	25V				•	,		
C324	1-126-970-11	ELECT	330uF	20%	50V			< JUMPER RE	SISTOR >			
C352	1-162-282-31	CERAMIC	100PF	10%	50V	JW406	1-247-807-31	CARBON	100 5% 1/4\	N		
C353	1-164-159-11	CERAMIC	0.1uF		50V							
C354	1-162-306-11		0.01uF	30%	16V			< LEAD PIN>				
C355	1-164-159-11	CERAMIC	0.1uF		50V							
C356	1-164-159-11	CERAMIC	0.1uF		50V	* LP301	1-690-880-21	LEAD (WITH C	ONNECTOR)			
C357	1-164-159-11	CERAMIC	0.1uF		50V			< TRANSISTOI	۲>			
C358	1-162-306-11	CERAMIC	0.01uF	30%	16V							
C375	1-162-294-31	CERAMIC	0.001uF	10%	50V	Q301	8-729-201-53	TRANSISTOR	2SA1015-GR			
C377	1-162-294-31	CERAMIC	0.001uF	10%	50V	Q302	8-729-900-80	TRANSISTOR	DTC114ES			
C381	1-164-159-11	CERAMIC	0.1uF		50V	Q303	8-729-201-53	TRANSISTOR	2SA1015-GR	(US,CND))	
						Q303	8-729-140-97	TRANSISTOR	2SB734 (SP,H	K,JE)		
C401	1-162-282-31	CERAMIC	100PF	10%	50V	Q304	8-729-620-05	TRANSISTOR	2SC2603-EF			
C402	1-164-159-11	CERAMIC	0.1uF		50V	Q305	8-729-119-76	TRANSISTOR	2SA1175-HFE	(US,CND))	
						Q305	8-729-140-97	TRANSISTOR	2SB734 (SP,H	K,JE)		
		< CONNECTOR >										
								< RESISTOR >				
CN302	1-770-167-11	CONNECTOR, FFC.	/FPC 19P									
* CN303		PIN, CONNECTOR				R101	1-249-421-11		2.2K	5%	1/4W	
* CN304		PIN, CONNECTOR				R102	1-249-441-11		100K	5%	1/4W	
* CN305		SOCKET, CONNEC				R103	1-249-421-11	CARBON	2.2K	5%	1/4W	
CN402	1-770-158-21	HOUSING, CONNE	CTOR 7P (S	SYSTEM	CONTROL)	R104	1-249-428-11		8.2K	5%	1/4W	F
						R105	1-249-429-11	CARBON	10K	5%	1/4W	
		< DIODE >										
						R106	1-249-441-11		100K	5%	1/4W	
D301		DIODE 11ES2				R107	1-249-421-11		2.2K	5%	1/4W	
D302		DIODE 11ES2				R201	1-249-421-11		2.2K	5%	1/4W	F
D303		DIODE 11ES2				R202	1-249-441-11		100K	5%	1/4W	
D304	8-719-200-82	DIODE 11ES2				R203	1-249-421-11	CARBON	2.2K	5%	1/4W	F
D305												
	8-719-200-82	DIODE 11ES2				R204	1-249-428-11		8.2K	5%	1/4W	F
						R205	1-249-429-11		10K	5%	1/4W	
D306		DIODE 11ES2				R206	1-249-441-11		100K	5%	1/4W	
D307		DIODE 11ES2				R207	1-249-421-11		2.2K	5%	1/4W	
D308		DIODE 11ES2				R301	1-249-425-11	CARBON	4.7K	5%	1/4W	F
D309		DIODE HZS30-2L										
D310	8-719-109-81	DIODE RD4.7ESE	32			R302	1-249-429-11		10K	5%	1/4W	
_						R303	1-249-417-11		1K	5%	1/4W	
D313		DIODE 1N4148M				R304	1-249-417-11	CARBON	1K	5%	1/4W	F
D314	8-719-987-63	DIODE 1N4148M										

				MAIN	М	O 1	ΓOR (S	LIDE)	MOTOR (TURN)		PA	NEL	<u>-</u>
Ref. No.	Part No.	Description			<u>Remark</u>		Ref. No.	Part No.	<u>Description</u>			Re	<u>emark</u>	
R305 R306	1-247-807-31 1-249-437-11	CARBON CARBON	100 47K	5% 5%	1/4W 1/4W		*	1-658-481-11	MOTOR (TURN) B					
R307 R308	1-249-413-11 1-249-413-11	CARBON CARBON	470 470	5% 5%	1/4W 1/4W				< CAPACITOR >					
R309 R310	1-249-413-11 1-249-413-11	CARBON	470 470	5% 5%	1/4W 1/4W	F	C701 C702	1-162-306-11 1-126-964-11	ELECT	0.01uF 10uF	309 209	6 5	16V 50V	
R311 R312	1-249-425-11	CARBON	4.7K 10K	5% 5%	1/4W 1/4W	F	C705	1-162-306-11	<pre>CERAMIC < CONNECTOR ></pre>	0.01uF	30%	6 1	16V	
R313 R314	1-249-393-11 1-249-429-11		10 10K	5% 5%	1/4W 1/4W		CN703		CONNECTOR, FFC					
R315 R316	1-249-393-11 1-249-429-11		10 10K	5% 5%	1/4W 1/4W	F	CN704	1-506-469-11	PIN, CONNECTOR < DIODE >	4P				
R317 R318	1-249-425-11 1-249-429-11	CARBON	4.7K 10K	5% 5%	1/4W 1/4W	F	D701	8-719-109-69	DIODE RD3.6ESE	32				
R319 ▲R372	1-249-429-11 1-247-641-00		10K 4.7	5% 5%	1/4W 1/4W (SP,HK,	JE)			< IC >					
						,	IC701	8-759-633-65	IC M54641L					
******	*********	*********	*****	*****	*****				<motor></motor>					
*	1-658-482-11	MOTOR (SLIDE) B					M701	A-4660-586-A	MOTOR ASSY (TU	JRN)				
		< CAPACITOR >							<resistor></resistor>					
C801 C804 C805	1-162-306-11 1-162-306-11 1-126-964-11	CERAMIC	0.01uF 0.01uF 10uF		16V 16V 50V		R706 R707	1-249-411-11 1-249-401-11		330 47	5% 5%		1/4W 1/4W	
		< DIODE >					******	*********	*******	*****	****	****	****	
D801	8-719-112-12	DIODE RD6.2ESE	32				* A-4673-995-A PANEL BOARD, COMPLETE (SP,HK,JE				. ,			

D801	8-719-112-12	DIODE RD6.2ESB	2				*	A-4673-995-A	PANEL BOARD, C	,	,	**	
D805	8-719-987-63	DIODE 1N4148M				*	A-4673-999-A	PANEL BOARD, COMPLETE (US,CND) ************************************					
IC801	8-759-274-09	< IC >					*	4-977-694-01	HOLDER (LED-3)				
10001	0-137-214-07	<motor></motor>						< CAPACITOR >					
M801	A-4660-926-A	MOTOR (CDM) AS	SY (SLIDE)				C601 C602	1-162-301-11 1-162-301-11	CERAMIC CERAMIC	0.0015uF 0.0015uF	30% 30%	16V 16V	
		< RESISTOR >							< CONNECTOR >				
R801	1-249-401-11	CARBON	47	5%	1/4W	F	* CN601	1-568-832-11	SOCKET, CONNEC	TOR 13P			
		< SWITCH >							< DIODE >				
S801	1-762-527-11	SWITCH, ROTARY (OPEN/CLOSE DET)					D601 D602	8-719-032-87 8-719-032-87					
***************					D603 D604	8-719-032-87 8-719-032-87	DIODE SEL5420S-TP (DISC2)(GREEN) DIODE SEL5420S-TP (DISC2)(GREEN)						

D605

D606 D607

D608 D609 D610

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

8-719-032-87 DIODE SEL5420S-TP (DISC3)(GREEN)

8-719-032-87 DIODE SEL5420S-TP (DISC3)(GREEN)

8-719-032-98 DIODE SEL5820A (DISC1)(RED) 8-719-032-98 DIODE SEL5820A (DISC1)(RED) 8-719-032-98 DIODE SEL5820A (DISC2)(RED)

8-719-032-98 DIODE SEL5820A (DISC2)(RED)

Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

Ne les remplacer que par une piéce portant le numéro spécifié.

PANEL

SENSOR

CONNECTOR

Ref. No.	Part No.	Description		Remark		Ref. No.	Part No.	Description			<u>Remark</u>	
D611	8-719-032-98	DIODE SEL5820A (DISC3)(RED)			S607	1-554-303-21	SWITCH, TACTILE (ENTER)					
D612		DIODE SEL5820A (DISC3)(R										
D613 D614		DIODE SEL6210S-TH10 (SEL DIODE SEL5221S (ENTER)		*************								
		< TRANSISTOR >				*	1-658-480-11	SENSOR BOARD				
Q601	8-729-900-80	TRANSISTOR DTC114ES										
Q602		TRANSISTOR DTC114ES						< IC >				
Q603 Q604	8-729-900-80 8-729-900-80	TRANSISTOR DTC114ES TRANSISTOR DTC114ES		IC702	IC702 8-749-924-18 IC PHOTO INTERRUPTER RPI-1391							
Q605		TRANSISTOR DTC114ES				IC703		IC PHOTO REFLE				
Q606	8-729-900-80	TRANSISTOR DTC114ES						< RESISTOR >				
Q607		TRANSISTOR 2SA1175-HFE						(NESISTOR >				
Q608	8-729-119-76	TRANSISTOR 2SA1175-HFE				R701	1-249-416-11		820	5%	1/4W	
		< RESISTOR >				R702	1-249-407-11	CARBON	150	5%	1/4W	ŀ
D. (0 0		0.000.00	=0.		_							
R602 R603	1-249-413-11 1-249-415-11	CARBON 470 CARBON 680	5% 5%	1/4W 1/4W	F	********	**********	******	*********	k sk sk sk sk sk sk s	******	
R604	1-249-417-11	CARBON 1K	5%	1/4W		*	1-658-479-11	CONNECTOR BOA	.RD			
R605	1-247-834-11		5%	1/4W				*********	***			
R606	1-249-421-11	CARBON 2.2K	5%	1/4W	F			< CONNECTOR >				
R607	1-249-425-11	CARBON 4.7K	5%	1/4W	F			COMMECTOR				
R611	1-249-402-11	CARBON 56	5%	1/4W	F	CN702	1-750-413-11	CONNECTOR, FFC	/FPC 8P			
R612 R613	1-249-402-11 1-249-402-11	CARBON 56 CARBON 56	5% 5%	1/4W 1/4W	F F			< TRANSISTOR >				
R614	1-247-807-31		5%	1/4W	'			< TRANSISTOR >				
						Q701	8-729-900-80	TRANSISTOR DI	C114ES			
R615	1-247-807-31		5%	1/4W				DEGLOTOD				
R616 R617	1-247-807-31 1-247-807-31	CARBON 100 CARBON 100	5% 5%	1/4W 1/4W				< RESISTOR >				
R618	1-247-807-31		5%	1/4W		R703	1-249-435-11	CARBON	33K	5%	1/4W	
R619	1-247-807-31		5%	1/4W		R704	1-249-429-11	CARBON	10K	5%	1/4W	
D. (0.4		0.455011 450	=0.		_	R705	1-249-417-11	CARBON	1K	5%	1/4W	F
R621 R622	1-249-407-11 1-249-409-11	CARBON 150 CARBON 220	5% 5%	1/4W 1/4W	F F	*******	e ale ale ale ale ale ale ale ale ale al	******	******	******	*****	
R623	1-249-409-11	CARBON 4.7K	5%	1/4W	-							
R624	1-249-425-11	CARBON 4.7K	5%	1/4W	F			MISCELLANEOUS				
R625	1-249-423-11	CARBON 3.3K	5%	1/4W	F			******				
R626	1-249-417-11	CARBON 1K	5%	1/4W	F	18	1-776-044-11	NIRE (FLAT TYPE)	(13 CORF)			
R627	1-249-417-11		5%	1/4W		20		WIRE (FLAT TYPE)	. ,			
R631	1-249-402-11	CARBON 56	5%	1/4W	F	107	1-452-538-11	MAGNET				
R632	1-249-402-11		5%	1/4W		108		WIRE (FLAT TYPE				
R633	1-249-402-11	CARBON 56	5%	1/4W	F	115	1-775-173-11	WIRE (FLAT TYPE) (19 CORE)			
		< ROTARY ENCODER >				151 1	8-848-367-11	OPTICAL PICK-UP	KSS-213B/	K-N		
DE / 0.4	1 472 452 11	ENCODER, ROTARY (SELECTOR I◄◄ -, ▶▶I+)				152		WIRE (FLAT TYPE	, , ,			
RE601	1-4/3-452-11					FL501 1-517-462-11 INDICATOR TUBE, FLUORESCENT M101 X-4917-523-4 MOTOR ASSY (SPINDLE)						
		< SWITCH >				M102		MOTOR ASSY (SL				
0/04	1 554 000 01	CIMITOUR TACTUS (SV OVERS	\ _ \			N 4704	A 4//0 50/ 1	MOTOR ACCUATO	IDNI)			
S601 S602	1-554-303-21 1-554-303-21	,	ıL)			M701 M801		MOTOR ASSY (TU				
S603		SWITCH, TACTILE (SKIP) SWITCH, TACTILE (DISC1)			S101		A MOTOR (CDM) ASSY (SLIDE) SWITCH LEAF (LIMIT)					
S604		SWITCH, TACTILE (DISC1) SWITCH, TACTILE (DISC2)				S811						
S605	1-554-303-21						555 71		(-2/		/	
6/0/	1 554 000 01		005)			*******	******	*******	******	******	*****	
S606	1-554-303-21	SWITCH, TACTILE (合OPEN/CI	LUSE)			I						

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.

A are critical for safety.

Replace only with part number specified.

Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	<u>Description</u>	Remark
		************* HARDWARE LIST	

#1	7-621-255-15	SCREW +P 2X3	
#2	7-621-775-10	SCREW +B 2.6X4	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#5	7-685-872-09	SCREW +BVTT 3X8 (S)	